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UNIVERSITY OF ALBERTA

PERCEIVED STRESSORS OF HOSPITALIZED
HIGH RISK ANTEPARTUM WOMEN

BY

SUSAN JAMES

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA

SPRING 1990

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SUBMITTED BY: SUSAN JAMES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF NURSING

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ABSTRACT

An exploratory-descriptive design was used to identify and rate the intensity of events perceived to be stressors by 30 high risk hospitalized antepartum women at specific points of time. Some previous investigations of antepartum hospitalization have utilized checklist or forced choice data collection methods to identify frequency and/or intensity of stressors of antepartum high risk women. In this study, a method similar to that used on non-hospitalized women by Arizmendi and Affonso (1987) involving semi-structured interviews was used. At the initial interview, which occurred within 48 hours of admission, women generated their own list of stressors, which they were then asked to rate. At each subsequent interview, the stressors were re-rated and new stressors were added and rated. The investigation was guided by a conceptual framework based on a modification of Lazarus' theory of stress and coping (1966).

The specific stressors identified were categorized into 26 stressor categories related to pregnancy, concerns, hospitalization and the high risk condition. Statistical differences in frequencies and mean intensity ratings were tested using chi-square and analysis of variance techniques. The categories of stressors most frequently identified by the sample included activity restriction, communication with health professionals, social isolation, concerns regarding children and hospital rules and routines. The categories of stressors rated as most intense included concerns regarding children,

uncertainty, labour and delivery, boredom and concerns regarding the fetus or newborn. Changes did occur in frequency and intensity of stressor identification as the length of hospitalization increased.

Although individual assessment of stressors is recommended, the patterns of frequencies of stressor identification in this study may indicate that some changes in nursing practice could assist in reducing or eliminating some stressors. Categories of stressors that may be reduced or eliminated by changes in nursing practice include communication, uncertainty, boredom, social isolation and activity restriction.

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CHAPTER I

Introduction

Approximately 10% to 20% of all pregnancies can be classified as "high risk". A high risk pregnancy occurs when physiologic and/or psychologic factors are present in the woman, fetus or infant which may result in a threat to the health of the mother-infant unit. (Kemp & Page, 1986). The establishment of regional centres for high risk perinatal care has contributed to a decline in maternal and fetal mortality rates. However, it is questionable if such long term hospitalization, often far from family and friends, is ultimately the best way to care for the pregnant woman at risk. It has been suggested that the morbidity rates for psychosocial factors that affect both the mother and her infant have increased for "iatrogenic reasons" when the woman is hospitalized during her pregnancy (Cohen, 1979). For example, the incidence of child abuse has been correlated with pregnancy complications requiring admission to hospital (Lynch, 1975).

Pregnancy has been identified as a period of developmental adaptation (Budd, 1987; Leifer, 1977; Rubin, 1975). Women are exposed to stressors from many sources during this time (Arizmendi & Affonso, 1987; Glazer, 1980; McGeary, 1987; Mowbray, Lanir & Hulce, 1982; Raphael-Leff, 1982). High levels of stress during pregnancy have been implicated in interruptions in maternal-fetal attachment (Avant, 1981; Gaffney, 1986; Leifer, 1977) and in increased incidence of obstetrical complications (Barnett & Parker, 1986; Crandon, 1979;

Omer, Elizur, Barnea, Friedlander & Palti, 1986; Ringrose, 1972; Stott, 1973).

There is evidence that hospitalization for medical and surgical problems is a stressful experience (Ahmadi, 1985; Volicer, 1977; Volicer, Isenberg, & Burns,1977). Studies of the experience of hospitalization for pregnancy complications reveal that stressors of antenatal women may differ from those of other hospitalized patients (Snyder, 1985; White & Ritchie, 1984). Women who are hospitalized for high risk pregnancy frequently do not feel ill. They may be considered to be difficult to care for by nurses because confusion and frustration may arise when coping strategies used by the women are not adequate (Snyder, 1979). There is evidence that women may experience more intense stressors as the length of hospitalization increases (White & Ritchie, 1984). While stressors in antepartum hospitalization have been studied (Ford, 1987; Loos & Julius, 1989; Merkatz, 1976; Snyder, 1985; White, 1981; White & Ritchie, 1984), differences in data collection methods and definition of stressors has resulted in inconsistent identification of stressors.

Purpose

The purpose of this study was to identify the frequency and intensity of stressors experienced by women at specific points of time during antepartum hospitalization for high risk pregnancy.

Research Questions

Following a review of the literature and based on the theoretical framework for the study, the following questions were formulated:

1. What are the stressors identified by antepartum women hospitalized for high risk pregnancy?
2. Of the identified stressors, which are identified most frequently by hospitalized antepartum women?
3. Of the identified stressors, which are rated as being most intense by hospitalized antepartum women?
4. How does reporting of frequency and intensity of stressors by hospitalized antepartum women change as the duration of antepartum hospitalization lengthens?

Assumptions

The following assumptions were made for the purpose of the study:

1. that the perinatal regionalization system works and that the women at the hospital used for the study setting will represent the high risk population of Alberta
2. that women will experience stressors related to their pregnancy and hospitalization
3. that they will be able to identify, report, and rate these stressors during an interview
4. that no significant differences in stressors occur in women who do not elect to participate in the study
5. that the women included in the study will answer the questions truthfully and completely.

Definitions

The following theoretical and operational definitions were used to guide the review of the literature, the development of the theoretical framework, the development of the research method, and the analysis of the data.

Theoretical Definitions

High Risk Pregnancy

A pregnancy in which physiologic and/or psychologic factors are present in the woman or fetus which may result in a threat to the health of the mother-infant unit (Kemp & Page, 1986).

Antepartum Period

The period of time between conception and the onset of "true" labour.

Gestation

The length of time from conception to the current point in the pregnancy.

Stressor

Any stimulus, biophysical or psychosocial, that effects a demand on the adaptive mechanism of the individual and which can be identified by that individual (Erickson & Swain, 1982).

Intensity

The degree of strength, energy or force, in this instance, of a stressor (Merriam-Webster Dictionary, 1970).

Frequency

The rate of occurrence, in this instance, of a stressor (Merriam-Webster Dictionary, 1970).

Operational Definitions

High Risk Pregnancy

A pregnancy in which current conditions or past history has resulted in a score of greater than 3 (high risk) on the Province of Alberta Pregnancy Risk Scoring Form (Appendix A).

Antepartum Period

For the purpose of this study, the antepartum period will be the period of time between 24 and 36 weeks gestation.

Gestation

The length of time measured in weeks from the time of conception to the current point in the pregnancy. Gestation will ideally be measured by applying Naegle's rule using the first day of the woman's last known normal menstrual period as the baseline data. When those data are unavailable or unreliable, gestation will be calculated using information from ultrasound examination or symphysis-fundal height. (Bobak and Jensen, 1987).

Stressor

Social, economic, cognitive and physical experiences associated with the childbearing process and hospitalization experience that generate discomfort and distress and that can be reported (Arizmendi & Affonso, 1987).

Intensity

Measured by the subject on a scale of 1 to 10, with 1 representing minimal threat to health or lifestyle and 10 representing the most threat to health or lifestyle possible.

Frequency

The number of times the particular stressor is identified within the sample.

Summary

The purpose and the questions guiding the research have been identified in this chapter. Literature related to stressors in antenatal hospitalization will be discussed in Chapter II. In Chapter III the methods are reported. Chapter IV contains the presentation of the findings of the research. The conclusions and discussion are presented in Chapter V.

CHAPTER II

Review of Relevant Literature

A review of the available published literature was conducted by searching Index Medicus, CINAHL and Psychological Abstracts and a computer search of Index Medicus using the search terms hospitalization, pregnancy complications, stress and anxiety. Other sources of literature were reference lists in articles and texts and serendipitous literature findings. A limitation to this search strategy was that the concept "stress" may be covered by other terms not included in the search.

This literature will be discussed in three sections: stress theory, pregnancy stress and stress in antepartum hospitalization.

Stress Theory

Theories and definitions of stress are numerous and include biological, life event, psychosomatic, transactional, group differences and life style approaches (Vingerhoets & Marcelissen, 1988). Stress can be defined as a nonspecific response of the individual to any stimulus or stressor (Lazarus, 1966; Selye, 1976). The stressor can be anything that the individual perceives as being a threat or potential harm physically, psychologically or socially. Supporters of the life event approach such as Holmes and Rahe (1967) and Paykel (1971) measure stress by an accumulation of exposures to events over a specific period of time.

The response to the stressor can also be varied. Disturbed affects such as anxiety, anger, depression and guilt, motor behaviours, change in cognitive functioning and physiological changes have been described as responses reflecting stress (Lazarus, 1966). Physiological responses to stress as the result of secretion of corticosteroids by the adrenal cortex have been described by Selye (1965). This has been further expanded by McCarty, Horwatt and Konarska (1988) to compare the physiological reaction to acute and chronic stress in animal models. Acute stress results in activation of the sympathetic-adrenal medullary system. When exposure to a stressor becomes chronic, there is a reduced release of catecholamines on exposure to similar (homotypic) stressors. However, when new (heterotypic) stressors are introduced in situations of chronic stress, there is an exaggerated response of the sympathetic-adrenal medullary system.

The individual's reaction to a stressor depends on the individual's assessment of the stressor. Lazarus (1966) described a process where cognitive appraisal takes place first to analyze the potential threat of the stressor and second to decide what strategies might be used to reduce or eliminate that threat. Situation-related factors such as potential constraints, degree of social support, ambiguity of situation and likelihood of harm and individual-related factors such as learning, previous experiences, personality and values interact to influence this cognitive appraisal. Although it may appear that the individual is not aware of this process, Lazarus (1966) has suggested that the stressor, its significance and selected reactions can be identified by the individual through questioning.

This stress process may be seen as circular (Lazarus, 1966). Cognitive appraisal of a stressor will be influenced by the effectiveness of previous responses in reducing the threat of that stressor. The less successful responses have been in reducing the threat, the more likely the perception of the degree of threat will increase. As the degree of threat increases or the actual harm becomes more imminent, the more likely that primitive, inadequate responses will be used (Janis, 1971). Thus, cognitive appraisal of a stressor at any given time can evaluate the degree of threat or intensity of the stressor.

Stress in Pregnancy

The literature review revealed four trends in writing and research related to stress in pregnancy: stressor stimulated developmental tasks; identification of pregnancy related stressors; the impact of stress on pregnancy outcome; and the effects of stress on maternal-fetal/infant attachment.

Stressor Stimulated Developmental Tasks

Pregnancy can be considered to be a developmental process (Osofsky, Osofsky, Culp, Krantz, Litt & Tobiasen, 1985). Rubin (1967 a,b, 1970, 1975) and Ballou (1978) described a series of developmental tasks the pregnant woman must accomplish in order to attain the maternal role. Deutsch (1973) suggested that anxiety experienced throughout the pregnancy period may act to stimulate the individual to do whatever work is required to accomplish the tasks of pregnancy.

Further support for an altered psychological state in pregnancy, presumably to accomplish pregnancy tasks was found in studies comparing pregnant and non-pregnant women. Objective measures of personality were compared in married women experiencing a "typical" pregnancy (*n*=19) and married women who had never been pregnant (Bailey and Hailey, 1986-7). In this study, pregnant women tended to be more introverted (*p*=.005) and had lower levels of self acceptance and independence (*p*=.025) than non-pregnant women. Barclay and Barclay (1976) measured attitudes, anxieties and knowledge about pregnancy in a group of 44 primigravidas in the second trimester and in a group of 28 female nulligravid college students. They found that pregnant women had less fear for the unborn child (*p*<.05), perceived pregnancy as less depressing (*p*<.01) and had more knowledge about pregnancy, even prior to prenatal classes (*p*<.001) than non-pregnant women.

Pregnancy Related Stressors

The variety of methods that have been used to measure or identify stressors has resulted in inconsistent information regarding stressors particular to pregnancy. By measuring stressful life events in 51 pregnant women, Yamamoto and Kinney (1976) found that pregnant women ranked the events differently than a general sample used by Paykel (1971) in developing the scale. They concluded that it was important to have subjects identify the emotional significance of the life event in order to more accurately identify the impact the event would have for that individual.

Barnett, Hanna and Parker (1983) added specific pregnancy events to a life event inventory to form the Stress Amount Checklist. A sample of postpartum women ranked the items as to the degree or amount of distress that they caused. One third of the highest ranking items among the sample were related to pregnancy. The investigators concluded that these findings supported the position that life event scales ought to include items that pertain specifically to the context situation of the study sample.

A sample of 100 pregnant women were asked to respond to a list of 62 concerns related to their pregnancy (Glazer, 1980). Most concerns were found to pertain to childbirth, medical care and self. There were fewer concerns about the baby, finances and subsequent pregnancies. Less than 50% of the sample identified family issues as concerns.

Fifteen categories of stressors were developed by interviewing 221 women in the first or the third trimesters of pregnancy or in the postpartum period (Arizmendi & Affonso, 1987). Subjects were requested to identify and rate stressful events occurring during pregnancy. Patterns in reporting and rating of stressors throughout pregnancy were identified. In general, the most frequently reported stressors were in the physical symptoms category. The least reported were stressors related to the family and to the newborn's behaviour. The most intense stressors were related to the baby's welfare and to the labour and delivery process. The least intense stressors were related to changes in living style and social stressors.

McGeary (1987) asked 55 Canadian women at various stages of an uncomplicated pregnancy or in the postpartum period to identify and rate pregnancy stressors. These findings were compared with those of Arizmendi and Affonso (1987). The subjects in this sample reported similar ratings in the first trimester to Arizmendi and Affonso's subjects (1987). However, in the third trimester body image was found to be the only stressful event in which there was consistency between the two samples. The difference in these findings may have been a result of different sampling methods or may suggest a lack of universality in pregnancy stressors.

Stress and Pregnancy Outcome

The third area of pregnancy stress research is the relationship between stress and pregnancy outcome (Table 2.1). Numerous investigators have attempted to predict pregnancy complications by measuring life stress (e.g. Rizzardo, Magni, Andreoli, Merlin, Andreoli, Cosentino & Ziglio, 1982), anxiety levels (e.g. Barnett & Parker, 1986) and social support (e.g. Norbeck & Tilden, 1983). Unfortunately, many of these studies have problems in design such as being done retrospectively (Barnett & Parker, 1986; Newton, Webster, Binu, Maskrey & Phillips, 1979; Stott, 1973) or not controlling for pre-pregnancy conditions which are highly correlated with complications such as diabetes (Chalmers, 1984; Engstrom, Geijerstam, Holmberg & Uhrus, 1964; Molfese, Bricker, Manion, Yaple & Beadnell, 1987). Several (e.g. Levy & McGee, 1975) measure anxiety or stress levels near the end of pregnancy when these levels have been shown to be high in almost all pregnant women (Rubin, 1967; Cohen, 1979).

Much of the research on stress and pregnancy outcome has used life event scales to measure stress levels. Life events have been correlated with delivery and postpartum complications ($p<.15$) (Smilkstein, Helsper-Lucas, Ashworth, Montano and Pagel, 1984), low birth weight ($p<.001$) (Ramsey, Abell and Baker, 1986), premature

Table 2.1

Correlations of Stress and Pregnancy Complications

Author	Complication	Correlation
STRESS=ANXIETY		
Crandon (1979)	pregnancy complications	+ve
Barnett & Parker (1986)	pregnancy complications	+ve
Lederman, et al (1981)	fetal heart changes	+ve
Omer, et al (1986)	premature labour	+ve
Ringrose (1972)	toxaemia	+ve
Chalmers (1984)	pregnancy complications	NIL
Farber, et al (1981)	pregnancy complications	NIL
Gorsuch & Key (1974)	pregnancy complications	NIL
Jones (1978)	pregnancy complications	NIL
STRESS=DENIAL OF PREGNANCY DIFFICULTIES		
Chalmers (1984)	pregnancy complications	+ve
STRESS=LIFE EVENTS		
Georgas, et al (1984)	pregnancy complications	+ve
Magni, et al (1986)	pregnancy complications	+ve
Molfese, et al (1987a,b)	pregnancy complications	+ve
Newton, et al (1979)	premature labour	+ve
Norbeck & Tilden (1983)	pregnancy complications	+ve
Nuckolls, et al (1972)	pregnancy complications	+ve
Obayuwana, et al (1984)	pregnancy complications	+ve
O'Hara (1986)	postpartum depression	+ve
Rizzardo, et al (1982)	pregnancy complications	+ve
Smilkstein, et al (1984)	delivery complications	+ve
	postpartum complications	+ve
Stott (1973)	pregnancy complications	NIL
Chalmers (1983)	pregnancy complications	NIL
STRESS=MATERNAL DISTRESS		
Blomberg (1980)	pregnancy complications	+ve
STRESS=MARITAL DISSATISFACTION		
Richardson (1987)	pregnancy complications	+ve
STRESS=NEGATIVE EMOTIONS		
Engstrom, et al (1964)	pregnancy complications	+ve
STRESS=PSYCHOLOGICAL TENSION		
Grimm (1961)	pregnancy complications	+ve

labour ($p<.02$) (Newton, Webster, Binu, Maskrey & Phillips, 1979) and postpartum depression (O'Hara, 1986). Rizzardo, Magni, Andreoli, Merlin, Andreoli, Cosentino and Ziglio (1982) and Georgas, Giakoumaki, Georgoulias, Koumandakes and Kaskarelis (1984) reported correlations between life events occurring in the six months prior to delivery and pregnancy complications ($p<.05$). Of several variables measured, Brown (1986) found life stress contributed the most to variance in a measure of health of women during pregnancy. Other variables found to significantly contribute to variance were satisfaction with partner support and history of chronic illness.

Other investigators have reported correlations between life events and pregnancy complications when other psychosocial variables have been combined with life events for example hopelessness (Obayuwana, Carter & Barnett, 1984), social support (Norbeck & Tilden, 1983), psychosocial assets (Nuckolls, Cassel & Kaplan, 1972) and combinations of variables including coping, anxiety and locus of control (Magni, Rizzardo & Andreoli, 1986; Molfese, Bricker, Manion, Beadnell, Yaple & Moires, 1987; Molfese, Bricker, Manion, Yaple & Beadnell, 1987).

Two investigators were identified (Stott, 1973; Chalmers, 1983) who were unable to demonstrate any correlation between life events and pregnancy complications. Stott (1973) measured pregnancy stressors retrospectively by interviewing a random sample of 153 women one month post delivery. Women and their children were followed for up to four years post delivery in order to identify latent effects of pregnancy stressors such as child developmental delay that would not have been evident at the first contact. No relationship between pregnancy outcome, including child health and prenatal stress could be identified. However, it may be possible that retrospective recall of stressors may have been influenced by events occurring at the time of the interview. Chalmers (1983) used a multivariate analysis approach with a sample of 782 pregnant women to determine predictors of pregnancy complications. Life events was not a significant predictor in this study. However, predictors that were significant such as age at birth of first child, education level and attitudes towards pregnancy may be associated in some way to life events or stressors.

Some researchers have used other variables to imply positive correlations between stress and pregnancy outcome. These variables include denial of pregnancy difficulties (Chalmers, 1984), psychological tension (Grimm, 1961), maternal distress (Blomberg, 1980), marital dissatisfaction (Richardson, 1987) and negative emotions in pregnancy (Engstrom, Geiferstam, Holmberg & Uhrus, 1964). Anxiety has been correlated to pregnancy complications in general (Crandon, 1979; Barnett & Parker, 1986) as well as to pathological changes in fetal heart rate (Lederman, Lederman, Work & McCann, 1981), premature labour (Omer, Elizur, Barnea, Friedlander and Palti, 1986) and toxaemia (Ringrose, 1972). Other investigators (Chalmers, 1984; Farber, Vaughn & Egeland, 1981; Gorsuch & Key, 1974; Jones, 1978) were unable to demonstrate significant correlations between anxiety and pregnancy complications. The differences in findings may have been related to sampling or data collection methods in some instances. For example, Jones (1978) used a sample of women in a low socioeconomic bracket. Chalmers (1984) suggested that a high level of social support from physicians and prenatal counsellors when complications occur may have reduced anxiety levels among that group of women.

Regardless of the inconsistencies in the evidence that stress contributes to the incidence of pregnancy complications, it appears that stress levels may be higher in women with pregnancy complications (Table 2.1). Whether the pregnancy complication resulted from the exposure to stressors or the complicated pregnancy led women to report or measure higher levels of stress is not always clear.

Stress and Maternal Behaviour

The fourth area of pregnancy stress research is related to the impact that high levels of stress have on maternal behaviour (Table 2.2). A variety of correlations between maternal behaviour and stress, usually measured as anxiety, have been reported. In many cases, these differences may be attributed to variety in data gathering and sample characteristics.

The findings obtained in a prospective study of 19 primigravidas indicated that women with high levels of anxiety had formed high levels of attachment to the fetus (Leifer, 1977). In this case, the measure of anxiety was based on a combination of interviewing and data gathering instruments. Maternal-fetal and maternal-infant attachment were measured by a nine item "Attachment to the Baby

Table 2.2

Correlations of Stress and Maternal Behaviour

Author	Type of Behaviour	Correlation
Leifer (1977)	attachment	+ve
Gaffney (1986)	attachment	-ve
Avant (1981)	attachment	-ve
Cranley (1981)	attachment	-ve
Boudreaux (1981)	attachment	-ve
Cohen (1979)	ability to attain maternal role	-ve
Lamm (1983)	ability to adjust to birth	-ve
Schroeder-Zwelling & Hock (1986)	mothering behaviour	NIL
Curry (1987)	attachment	NIL
Kemp & Page (1986)	attachment	NIL
Mercer, et al (1988)	attachment	NIL

Checklist" developed for the study. In contrast, Gaffney (1986) found a low negative correlation between maternal fetal attachment (Cranley's Maternal Fetal-Attachment Scale) and state anxiety scores (Spielberger's STAI) ($p>.05$) in 100 subjects, 67 of whom were primigravidas. Other investigators have reported findings that support those of Gaffney (1986). By measuring anxiety (Taylor Manifest Anxiety Scale) and maternal-infant attachment (modified Klaus and Kennel maternal attachment instrument) in thirty primigravidas on the first ($p=.02$) and third ($p=.05$) postpartum days, Avant (1981) found a negative correlation between these two variables. While developing a tool for measuring fetal-maternal attachment, Cranley (1981) found a negative correlation between perceived level of stress and maternal-fetal attachment ($r=-.41$) in two groups of 41 and 30 women.

Other investigators have found interference with maternal-fetal or maternal-infant attachment that correlated with variables which may imply stress or anxiety. Boudreaux (1981) suggested that maternal attachment (Cropley, Lester and Pennington's Maternal Attachment Tool) was decreased when high risk mothers were separated from their well newborns for 24 hours or more after delivery. Cohen (1979) suggested that anything that increases anxiety during pregnancy may interfere with ability to attain the maternal role. In a group of 26 women experiencing at least a second birth of a baby with respiratory distress syndrome, the ability to adjust to the birth was negatively correlated with the number of previous premature births ($p<.05$) (Lamm, 1983).

Some investigators have been unable to demonstrate any significant differences in maternal-fetal or maternal-infant attachment in situations where stress or anxiety may be increased. When comparing anxiety and mothering behaviour in 20 diabetic and 20 non-diabetic women, Schroeder-Zwelling and Hock (1986) were unable to demonstrate any difference in either variable during the early postpartum period. However, the women with diabetes were considered to be well controlled and did not require hospitalization. Therefore, the psychological adjustments to pregnancy and birth may not have differed greatly in the two groups. In the postpartum period, anxieties related to pregnancy and neonatal complications potentially experienced by women with diabetes may have been reduced. No differences in maternal-fetal attachment were found in several studies comparing high risk and normal pregnancies (Curry, 1987; Kemp and Page, 1986, 1987; Mercer, Ferketich, May, DeJoseph & Sollid, 1988). Taylor and Hall (1979) suggested that delivery in a tertiary referral centre is beneficial to parent-infant attachment when compared to delivery in a local hospital when the baby is transferred to a level three nursery.

Stress in Antepartum Hospitalization

Identification of Stressors

It appears that women who are hospitalized during the antenatal period can identify numerous stressors (Tables 2.3, 2.4). Based on clinical observations, Galloway (1976), Gyves (1985), Halstead (1974), Merkatz, Budd and Merkatz (1978), Penticuff (1982), Weil

Table 2.3

Stressors found to be Frequently Identified Among Hospitalized High Risk Antepartum Women

STRESSOR	Author
Being Hospitalized	6
Boredom	3
Communication	2, 5, 6, 7
Concerns re Fetus/Newborn	4
Concerns re Self	4
Emotions	9
Health Status	2, 6, 9
Hospital Environment	2
Hospital Routines	5
Loneliness	3
Loss of Experiences	6
Medications	8
Physical Appearance	4
Physical Discomfort	8
Powerlessness	3
Separation from Family	6, 8, 9

Authors

1. Ford (1987)
2. Heaman (1988)
3. Loos & Julius (1989) (*not ranked)
4. Merkatz (1976)
5. Rosen (1975) (*not ranked)
6. Snyder (1985) (*not ranked)
7. Taylor (1985)
8. Waldron & Asayama (1985)
9. White (1981)

Table 2.4

Stressors found to have High Intensity Ratings Among Hospitalized High Risk Antepartum Women

STRESSOR	Author
Boredom	2, 7
Concerns re Pregnancy	1
Concerns re Self	1
Depression	7
Emotions	9
Family Status	9
Hospital Environment	2
Hospital Routines	2
Loneliness	7
Separation	1, 7, 9

Authors

1. Ford (1987)
2. Heaman (1988)
3. Loos & Julius (1989)
4. Merkatz (1976)
5. Rosen (1975)
6. Snyder (1985)
7. Taylor (1985)
8. Waldron & Asayama (1985)
9. White (1981)

(1981), Williamson (1981) and Wohlreich (1986) described various sources of stress related to the diagnosis of being high risk, diagnostic procedures, transfer from local hospitals to tertiary care, family concerns about other children and husbands, medications, bed rest and hospital staff.

In a longitudinal study of the experience of one woman who was hospitalized for eight weeks, Rosen (1975) identified treatments, procedures, hospital routines, and separation from the woman's family as stressors. Uncertainty in length of time of hospitalization and conflicting messages from care-givers were identified as major stressors.

Antepartum hospitalization stressors were identified and ranked by frequency by Merkatz (1976, 1978). Nurses on an antepartum unit made daily recordings of the frequency of a set list of behaviours on all in-patients. These behaviours were felt to be reflective of reaction to stress. A distress behaviour index was calculated by dividing the cumulated daily scores by the total days of hospitalization. The most frequently observed behaviours were verbalizations related to concerns regarding the baby and the woman's own health. Other frequently observed behaviours were related to physical appearance and sleep and concerns regarding the spouse and children at home.

The Antepartum Hospital Stressors Inventory (AHSI) was developed by White (1981). The 47 potential stressors included were based on the investigator's clinical experience, information from antenatal nurses, literature regarding pregnancy stressors and hospitalization stressors such as those identified by Volicer (1974, 1977, 1978) and Wilson-Barnett (1976). The stressors were divided into seven categories: separation; environment; health status; communication with health professionals; self-image; emotions and family status. Sixty-one hospitalized women were asked to rate the items on a Likert-type scale. Stressors identified from high to low rating were separation, emotions, health status, self image, family status, communication with health care team and environment. Analysis of the AHSI scores revealed significant differences ($p=.0001$) in the scores between the seven stressor categories. These categories could be separated into three significantly different groups ($p=.05$) labelled as "some stress", "very little stress" and a middle group between these two. Separation from home and family and disturbing emotions ranked highest, changing family circumstances ranked medium and communication with health professionals and the hospital environment ranked lowest (White and Ritchie, 1984).

Through weekly non-directive interviews of seven antepartum hospitalized women, Snyder (1985) was able to identify five categories of stressors: the high risk condition, hospitalization, family relationships, loss of normal experiences of life and of childbearing and relationships with health care professionals. No attempt was made to rank or rate these stressors.

Waldron and Asayama (1985) interviewed 18 women hospitalized for threatened premature labour several times throughout pregnancy to identify stressors. Separation from home and spouse, physical discomforts, medication side effects, feelings of helplessness, loss of control and uncertainty about the length of hospitalization were prominent stressors.

A consumer survey of 132 women who were hospitalized during the antepartum period revealed that communication related complaints including a lack of information, conflicting information and advice and communication between staff were frequent complaints. The complaints that were found to be reported as the worst things about being in hospital were boredom, depression, homesickness and loneliness (Taylor, 1985).

Ford (1987) used Linear Analogue Self Assessment scales to measure stressors and adaptation from the hospitalized women's point of view with a sample of 27 women. Stressors reported to be the most intense were concerns related to pregnancy, separation from family and self.

Heaman (1988) compared mood disturbances, life stress and social support in woman hospitalized and women not hospitalized for pregnancy induced hypertension. She found that there were significantly higher levels of mood disturbance and significantly more concerns reported among women who were hospitalized. Frequent concerns reported by the hospitalized women included the hospital environment, health status and communication with health professionals. The aspects of hospitalization that were reported as being the "worst things about hospitalization" included boredom, the hospital environment and hospital routines.

Loos and Julius (1989) conducted a phenomenological study of the antepartum hospitalization experience with 11 women between 26 and 38 weeks gestation who had been hospitalized for more than five days. They found that women perceived that their needs were not being met in the areas of loneliness, boredom and powerlessness.

Behaviours and Stress

A variety of behaviours have been described in the literature that were labelled as being indicative of reactions to stress. These included threatening to leave hospital, irritation with procedures, crying and sleep disturbances (Rosen, 1975); hostility, depression and withdrawal (Dore and Davies, 1979); assessing, balancing and controlling (Corbin, 1987); crying, insomnia and restlessness (Halstead, 1974). Snyder (1985) categorized observed behaviours as denial, rationalization, control, accomplishment, trajectory definition and use of social support systems. In a description of hospitalized pregnant diabetic women, Merkatz, Budd and Merkatz (1978) observed that when the women used denial, regression or isolation in behaviours pertaining to eating, sleeping, physical appearance, interpersonal interactions and verbalizations, they appeared to be having difficulty coping with hospitalization stresses.

Stress and Length of Hospitalization

There is some evidence that the length of hospitalization may influence the reaction to the stressors experienced. The twelve subjects from White's (1981) sample who were still in hospital two weeks after admission to be retested on the AHSI reported a significant increase ($p=.0025$) in the intensity of stressors. No changes were reported in the relative differences in stressor categories. An "adverse reaction to hospitalization score" was formulated through multiple measures on nine hospitalized antepartum women (Kramer, Coustan, Krzeminski, Broudy and Martin, 1986). None of the women who were hospitalized for more than one month were able to maintain "good mood and behaviour". Waldron and Asayama (1985) found changes in concerns from a focus on the welfare of the fetus to a focus on self after eight days of hospitalization. Ford (1987) did not measure changes in stressor over time, but found that women who were hospitalized for a longer period of time when they were interviewed reported lower levels of adaptation to hospitalization than women who were hospitalized for a short period of time when they were interviewed. Although Merkatz (1976) was unable to demonstrate significant differences in the Distress Behaviour Index between women hospitalized less than 14 days and those hospitalized more than 14 days, individual Distress Behaviour scores tended to increase over time.

Stress and Non-Antenatal Hospitalization

The above findings differ somewhat from studies of hospitalized male and female adult medical and surgical patients. Volicer (1973, 1974, 1977), Volicer and Bohannon (1975) and Volicer and Burns (1977) found that patients seldom identify family concerns, emotions or hospital procedures as sources of stress. Although hospital routines have not scored highly when measured with Volicer's Hospital Stress Rating Scale (Volicer, 1973; Wilson-Barnett, 1976), the finding that state anxiety was elevated ($p<.001$) on the day of a special test suggests that procedures may evoke anxiety (Wilson-Barnett & Carrigy, 1978).

Some similarities to antepartum hospitalization have been reported in investigations of medical and surgical hospital patients. Uncertainty in illness was correlated with hospital stress ($r=.35$, $p<.001$) (Mishel, 1984). Uncertainty in diagnosis and management has been identified as a continuing problem in high-risk pregnancy (Kemp & Pond, 1986). Other similar stresses reported include lack of information and communication (Bunzel, 1982) and over-stimulation, social isolation and interference with sleep and rest (Hannich, 1982).

When samples of medical patients have been broken down by sex and age in some studies (Wilson-Barnett, 1976; Wilson-Barnett & Carrigy, 1978), women found more aspects of hospitalization to be negative than men. Women under the age of 40 reported higher levels of anxiety and depression than any other group. These findings are likely significant for the intended population, most of whom are under 40 years of age.

The finding that reaction to hospitalization worsens with time is not supported by Wilson-Barnett and Carrigy (1978) who found that anxiety was highest ($p<.05$) on the day of admission. However, Erickson and Swain (1982) found that individuals with high stress levels had longer hospital stays than those with low stress levels. Since it is not clear when data collection occurred in relationship to time of admission, it is not clear whether stress was a contributing factor or a result of length of hospitalization.

Lucente and Fleck (1972) found a positive correlation ($p<.0005$) between the size of the hospital and the levels of anxiety. In other words, anxiety was highest in university teaching hospitals. High levels of social support from friends and other patients has been correlated with reduced levels of stress ($p<.05$) (Ahmadi, 1985). These findings may have implications for the nursing management of women hospitalized in university teaching hospital tertiary care centres, particularly when they have been transferred from smaller, community hospitals and are limited in their contact with family and friends.

Summary of the Literature

In summary, the literature reviewed included an overview of stress theory, stress in pregnancy, and stress in hospitalization. Stressors can be defined as anything that the individual finds to be a threat or potential harm physically, psychologically or socially. Individuals may have a variety of responses to stressors. It is possible that individuals are able to identify stressors and quantify the impact of those stressors identified (Lazarus, 1966). Pregnant women experience stressors unique to pregnancy (Barnett, Hanna, & Parker, 1983). It has been suggested that it is important for women to rate the emotional significance of stressors in order to adequately assess the impact of the stressor on the individual (Yamamoto & Kinney, 1976). High levels of stress have been implicated in pregnancy complications and interference with the development of the relationship between the woman and the fetus and/or infant.

Stressors have been identified in samples of hospitalized high risk antepartum women. Inconsistent patterns of stressor identification and rating may be related to the variety of research methods used. There has been some evidence that stress levels increase or change as the length of hospitalization increases (Ford, 1987; Kramer, Coustan, Krzeminski, Broudy, & Martin, 1986; Waldron & Assayama, 1985; White, 1981). Evidence from studies of hospitalization of medical and surgical patients may indicate that anxiety or stress levels are likely to be high among women who are transferred to large teaching hospitals from small community hospitals and are separated from family and friends (Ahmadi, 1985; Lucente & Fleck, 1972).

Theoretical Framework

The theoretical framework for this study was based on stress theory and findings from the reviewed literature. A diagram of the framework can be found in Figure 2.1. When a woman becomes pregnant, the physical changes accompanying the pregnancy and the psychosocial expectations accompanying the change in role act as stressors (Rubin, 1967; 1975). For most women, these stressors may stimulate them to accomplish the developmental tasks of pregnancy (Deutsch, 1973). They are able to use cognitive processes, previous experiences and support of others to assess the stressor and cope with the demands of the stressor.

Hospitalization for high risk pregnancy adds new (heterotypic) stressors to the already existing (homotypic) stressors of a woman's pregnancy. Situational and individual factors will influence how a

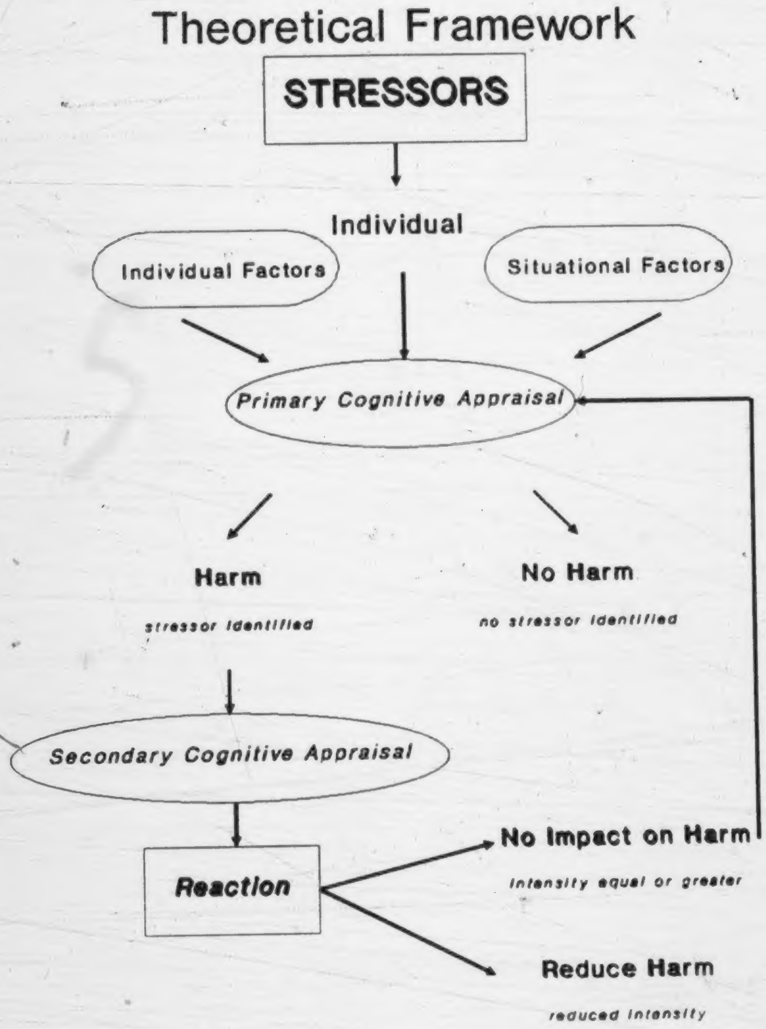

Theoretical Framework
STRESSORS
Individual
Individual Factors
Situational Factors
Primary Cognitive Appraisal
Harm
stressor identified
No Harm
no stressor identified
Secondary Cognitive Appraisal
Reaction
No Impact on Harm
intensity equal or greater
Reduce Harm
reduced intensity

Figure 2.1

Theoretical Framework

woman evaluates the stressors and how she reacts to them. This reaction to new stressors may be exaggerated (McCarty, Horwatt & Konarska, 1988). The magnified sympathetic-adrenal medullary response may affect the health of both the mother, for example by increasing blood pressure or the fetus/newborn, for example by stimulating premature labour or by reducing placental blood flow. By removing the woman from her usual lifestyle and social setting, she may not have access to some of her usual methods of stress reduction. For example, if she has concerns about her family, she may be able to do little more than to talk to them on the telephone. In some instances, she can implement coping strategies, but receives no confirmation that these are beneficial. For example, a woman with complete placenta previa may remain on bed rest for many weeks, but still not know if she will deliver a normal healthy baby. In accordance with the circular nature of the stress process (Lazarus, 1966), failure to reduce the threat of a stressor influences further evaluation of the nature of that stressor.

As the period of hospitalization extends, the woman may be exposed to more stressors. There may be changes in the situational factors that influence her cognitive appraisal not only of these new stressors, but of those stressors already existing. Changes may be both positive, such as gaining support from other patients and health care professionals and negative, such as deterioration of the risk condition.

If stress is a contributing factor in the incidence of pregnancy complications, then women hospitalized during pregnancy are perhaps at risk for developing further complications. Pregnant women are in a risk group for age and sex (Wilson-Barnett, 1976) for experiencing high levels of stress in hospital. A review of the literature has demonstrated that high levels of stress or anxiety are correlated with difficulties in developing attachment with the fetus and in adopting the maternal role (Avant, 1981; Boudreaux, 1981; Gaffney, 1986).

Summary

In this chapter, a review of literature related to stress, pregnancy stressors, and antepartum hospitalization was presented. A theoretical framework based on the literature reviewed was developed. The research method used to investigate the questions which arose from the literature review and the theoretical framework is described in Chapter III.

CHAPTER III

Research Methods

This exploratory-descriptive study (Burns & Grove, 1987) was designed to identify the frequency and intensity of stressors experienced by women at specific points of time during antepartum hospitalization for high risk pregnancy. The emphasis in this study was on self-identification of the stressors rather than on the use of objective rating scales such as those used in some previous studies of this population (Merkatz, 1976; White, 1981). Validity and reliability of such scales has not been well established. In addition, this study was designed to examine differences in the frequency of identification and in the rating of the intensity of specific stressors at various points throughout the hospitalization period. There was no attempt made to examine causative factors related to frequency or intensity of stressor identification.

Setting

This study took place on an 18 bed antenatal unit in a hospital providing tertiary level perinatal care. The nursing staff on this unit rotated between the labour and delivery suite and the antenatal unit. A primary nursing pilot project was initiated on the unit around the same time as the data collection was commenced. A recreation programme, focusing on crafts and videos was available to all women on the unit.

Target Population

The target population included all women who were diagnosed as having a high risk pregnancy and were hospitalized in a tertiary care antenatal unit and met the inclusion criteria.

Inclusion criteria

The women were between 24 and 36 weeks gestation at the time of admission. This was to ensure that they had a potentially viable fetus and yet there was still some risk of prematurity. They were to be hospitalized for an undetermined length of time. They were hospitalized for less than 48 hours in the study setting when first approached. They were able to speak, read and write English in order to give informed consent and to answer questions during an interview.

Exclusion criteria

Women with a documented history of psychiatric problems were not included since the stress process may differ when cognitive appraisal is disturbed. Women who were admitted with a definite diagnosis of fetal abnormality or of fetal death were not included. Women under the age of 18 were not included since they may have experienced stress from sources not typical of most pregnant women.

Sample Population

The sample consisted of 31 hospitalized high risk antepartum women. Thirty of the women met the inclusion criteria listed above. One of the women was found not to meet the inclusion criteria after the second interview. She was interviewed a total of three times, but the data obtained from her interviews were not included in the statistical analyses.

Procedures

Women who met the inclusion criteria were given a letter describing the study by their nurse or the unit charge nurse. The investigator returned later to discuss the study with these women. Women who expressed an interest in participating were then given a consent form to read and sign (Appendix B). Subjects were informed of their right to withdraw from the study without consequence at any time. They were informed that all raw data were to be kept by the investigator until the study was completed, at which time it would be destroyed. Subjects were given the opportunity to chose if they wanted coded data obtained from them kept in a computer file after the research was completed. Anonymity would be protected both in the research report and in any publications. Subjects were informed that their responses would not be shared with the hospital staff nor with their physician. All subjects were given a copy of the informed consent form. Interviews were held in the woman's room or in a common lounge area. When women who were in semi-private rooms did not choose to move from their room for the interview and their roommate was present, the curtains were drawn.

Instruments

After obtaining consent, each woman was interviewed using a semi-structured interview format (Appendix C). In the first part of the interview, subjects were asked to list events/things perceived as stressful during this pregnancy. This method of identifying stressors which has been used by Arizmendi and Affonso (1987) was selected over using a checklist such as those developed by Holmes and Rahe (1967), White and Ritchie (1984), McGeary (1987) or Volicer (1973). Of these checklists, the only one used on a population of hospitalized high risk antepartum women was that of White and Ritchie (1984). White (1981) interviewed her sample after administering the AHSI to validate that the inventory was complete. However, this method is questionable since subjects may be influenced by the exposure to the inventory prior to the interview.

In the second part of the interview, subjects were asked to rate each event in terms of its relative intensity on a visual analog scale of 1 - 10. A score of one represented a minimally stressful event, a score of ten represented the most stressful event possible. The interview format was used to ensure that subjects understood the rating process and to clarify stressors identified by the subjects. The women's responses were recorded verbatim along with their assigned ratings.

The interview format used was similar to that used by Arizmendi and Affonso (1987). The advantage of using such a design is that it is possible to clarify the responses to adequately categorize them. A disadvantage is that subjects may have difficulty in verbalizing stressors or in quantifying the stressor. Arizmendi and Affonso (1987) suggested using an anchor point such as weight gain to provide guidelines for the subjects. However, McGeary (1987) found that non-hospitalized pregnant women did not view the anchor event of weight gain to be a stressful event, and it may be even less so for hospitalized women. Both these studies used a scale of 1-100. In this study a 1-10 scale with descriptors of "least stressful", "moderately stressful" and "most stressful" was used.

A biographical questionnaire (Appendix D) was given to all subjects after the interview was completed. This order in procedure was selected to eliminate the possibility that responding to the biographical questionnaire may have influenced the subjects' responses when interviewed. This order may have also reduced influence on the part of the researcher during the interview based on knowledge of the subject.

The data obtained from this questionnaire were used to describe the sample. Items were included that appeared to be implicated in stressor identification or intensity in the review of the literature. This information was also used as a validity check for the stressors identified.

Women who remained hospitalized were re-interviewed in one week, two weeks, and then at two week intervals. At these subsequent interviews, they were asked to re-rate the stressors from the previous interview on a 0 - 10 scale and to identify and rate any new stressors. The zero rating was added on these subsequent interviews to give the women the opportunity to indicate that the event was no longer a stressor. Additional biographical data were obtained following stressor identification and rating (Appendix E). On average, interviews lasted approximately 45 minutes.

Following each interview, information that would be useful in interpreting the interview data such as diagnosis, history, and physician's orders was obtained through a review of the woman's chart. Detailed notes related to the interview were compiled by the investigator immediately following every interview to assist in later data analysis.

Data Analysis

The stressors were categorized according to content. Frequencies (number of times reported) and mean intensities (score given on the rating scale) for each category at each interview were calculated.

The statistical significance of differences in frequencies among categories was tested through chi-square analysis. Similarly, differences in intensity ratings were tested through analysis of variance techniques. In order to check the validity of the research findings for generalizability to the target population, data about the sample were compared with available data about the target population using chi-square analyses. An alpha level of $p \leq .05$ was used throughout for tests of significance.

Validity and Reliability

Threats to validity and reliability in this study were recognized and where possible, attempts were made to control for them.

Threats to Internal Validity

History

Pregnancy and its stressors do not occur independently of other events. Therefore, stressor identification and rating may be influenced by unanticipated events occurring to individuals that are not directly related to hospitalization or pregnancy. The biographical questionnaire and review of the women's charts may have provided information about events that may have influenced stressor identification and rating. With few exceptions, women identified such events to the investigator when discussing their stressors with the investigator. Although such events may have precipitated the identification of stressors related to the event, they did not appear to influence rating of other stressors. For example, one woman's husband was trying to get a job in Canada. She did identify concerns about this as a stressor at the first interview. However, the variation in stressor identification and rating at subsequent interviews did not appear to fluctuate with events related to this stressor. When he did obtain a job, there was no dramatic change in the rating of her other stressors.

Testing

There is potential that the identification and rating of stressors on repeat interviews could be influenced by the fact that women had been interviewed earlier. Although Lazarus (1966) suggested that individuals can be aware of the stress process and that this can be demonstrated through interviewing, there may be factors that reduce awareness of stressors on the first interview. However, through the process of being interviewed and having cognitive processes regarding stressors activated, women may have increased their awareness of stressors. Therefore, at a subsequent interview, they may, in fact, have identified stressors that were present at the time of the first interview but not mentioned at that time. In order to ensure that new stressors identified at subsequent interviews were in fact "new", subjects were asked when they first became aware of the stressor. No woman reported that a "new" stressor was one that was present at a previous interview, but not identified. Therefore, the interview likely did not influence identification of events perceived by women as stressors. Further support that the interview did not influence stressor identification may be found in the fact that women did indeed add new stressors at subsequent interviews and did rate some events as zero, or no longer stressors, at subsequent interviews.

Women may have remembered earlier rating scores during subsequent interviews and have been influenced by this in their current rating. By using a visual analog scale rather than asking the woman to assign actual numbers to the stressors, the memory of specific ratings from one interview to the next may have been reduced.

Maturation

Since pregnancy has been described as a developmental process (Rubin, 1975) and that stress levels may change during that process (Arizmendi & Affonso, 1987), it seems likely that there would be changes in stressor identification and rating even without hospitalization for high risk pregnancy. Information about gestation was collected for each subject. In addition to data analysis for the entire sample, the data of three sub-groups defined by gestation at the time of admission (25-28 weeks, 29-32 weeks, and 33-36 weeks) were analyzed.

Instrumentation

The women were interviewed for stressor identification on the first interview and then were given previously identified stressors on subsequent interviews for further rating. Since these two methods of data collection differ, it was possible that any differences in stressor identification and rating found between the first and second interviews may have been because of the data collection methods rather than the length of time in hospital. Biographical and chart information obtained at each interview, to an extent, acted to confirm the stressor identification and changes in rating.

The data collection method may have been inefficient in identification of stressors. Some women did have difficulty in identifying stressors. For some women, the definition of stressors used was difficult to apply to their situation. Because a check-list approach was not used, detailed prompting of stressor categories was avoided, even though this may have assisted some subjects to expand on their stressor identification.

For women who were hospitalized for long periods, the research interview may have become similar to a supportive intervention, and therefore may have reduced the intensity reported for some stressors. Interviews with women who had long hospitalizations tended to last close to an hour rather than the 15 minutes anticipated. However, this may have meant that these women felt more at ease to discuss stressors as well as other details of their experience, and in fact, the data obtained from these women may have been more reflective of the actual stressors experienced.

Selection Bias

The sample was selected on a convenience basis. This may have increased the likelihood that the subjects were different in some important way from women not included in the study. Prior to commencing data collection, meetings were held with health care team members to ensure that they understood the purpose of the study and that subjects could be any women who meet the inclusion criteria. The study sample was compared to data available from the study unit, province and city.

Attrition

Although it was possible that some women would elect to drop out of the study prior to their delivery or discharge, all women consenting to participate remained in the study.

Data Analysis

Content analysis of the data to form categories of stressors may have been subject to biases of the investigator. Other potential categories may exist. However, in order to organize the data into a manageable number of categories, some compromise in exactness of description of stressors was made. For example, the category "concerns regarding children" contained items pertaining to the safety of children, to obtaining childcare, and to missing children. Each of these areas could potentially have been a separate category. Content analysis was done in consultation with an expert in the field of stress and maternal-infant nursing. A validity check of the categories was done by giving a maternal-infant nurse a list of the categories and a list of specific stressors and asking that the stressors be matched to the categories. A 97% level of agreement was obtained. Categories of stressors identified in the literature were also considered when forming the categories.

Threats to External Validity

Non-Probability Sampling

Although the generalizability of the findings of this study may be limited by the use of a convenience sample rather than a random sample, the use of a tertiary referral centre for the study setting may have increased the likelihood that the sample was representative of the target population. The perinatal regionalization system is intended to assure that women are transferred on the basis of need for a bed in a tertiary centre rather than on the basis of variables such as socio-economic status, personal choice of physician, type of delivery facilities or nursing policies. A comparison of selected demographic characteristics of the sample with the general population was undertaken to confirm that the sample population was representative of the high risk population in the catchment area of that tertiary centre in relation to those characteristics.

Sample Size

The use of a small sample means that the findings of the study must be interpreted with care. The data obtained on the biographical questionnaire and from the chart were compared with available data from the hospital and the province regarding high risk pregnancy. Since some differences were noted between the target population and the study sample, women who do not choose to participate in the study may have been different in some way from those in the study.

Reliability

Reliability refers to the degree to which the instrument consistently measures a concept (Burns & Grove, 1987). To an extent, this was controlled for because each subject generated their own list of stressors. No subject who was interviewed more than once reported that they could not recall to what a stated stressor on their list referred. Nor did any subject report that they could not remember why an event identified at an earlier interview was a stressor. No subjects interviewed more than once reported that they had missed some stressors at an earlier interview. Therefore, it is unlikely that subjects interviewed only once had identified incomplete stressor lists. All subjects were asked to use the same definition of a stressor in their identification. Therefore, it is likely that the data obtained from each subject represented the same concept and could, in fact, be combined with data obtained from all subjects and analyzed statistically.

By interviewing subjects throughout their hospitalization, the reliability of conclusions related to changes in stressor identification and rating may have been increased.

Summary

The research methods used in this study have been described. The description included study design, data collection procedures, data analysis and controls for potential threats to validity and reliability of the study. The findings obtained in the data collection will be presented in Chapter IV.

CHAPTER IV

Findings

The findings will be discussed in four sections: (a) description of the sample, (b) categories of stressor identification, (c) frequency of stressor identification, and (d) intensity of stressor identification. Changes in frequency and intensity as the length of hospitalization increases will be discussed throughout.

Description of the Sample

There were 31 women included in the sample. One of these women was found not to meet the inclusion criteria after the second interview. The data from her interviews were not included in the statistical analysis.

The women ranged in age from 18 to 36 with a mean age of 28.2 years. Seventy seven per cent of the sample was married, 13% was in a common-law relationship, and the remaining 10% was either single, separated or divorced. Forty eight per cent of the women reported a total family annual income of greater than $35,000, 26% reported $20,000 to $35,000, and 26% reported less than $20,000. The number of years of completed education ranged from 8 to 19 years (M=13.2). Thirty three per cent of the women described their occupation as homemaker. Forty seven per cent of the sample was working outside the home when they found out that they had to be admitted to hospital.

The women's gestation on admission ranged from 25 to 36 weeks (M=31.3) (Table F-1). They were hospitalized on the antenatal unit from 3 to 72 days (*M*=16.4). The number of interviews done with the sample group ranged from 1 to 7 (*M*=2.2) (Table F-2).

The number of pregnancies (gravida) within the sample ranged from 1 to 9, with 40% of the women being primigravidas (Table F-3). The number of deliveries past 20 weeks gestation (para) within the sample ranged from 0 to 7, with 47% of the women being nulliparous (Table F-4). The number of children at home for each woman ranged from 0 to 6, with 40% of the women having no children at home and 36% of the women having one child at home (Table F-5). The differences between frequencies of para and children at home can be accounted for through neonatal deaths, adoptions and step-children.

The most frequent reason for admission to the antenatal unit was premature labour (37%) (Table F-6). Of the women who had previous pregnancies, 67% (12) had experienced complications in at least one of those pregnancies. Of the women who had complications in previous pregnancies, 58% (7) were hospitalized during the antenatal period for those complications.

At the first interview, 66% of the women were on bedrest with bathroom privileges, 13% were allowed wheelchair privileges, and the remaining women were allowed a range of ambulatory activity. The frequencies of activity changed little over the period of hospitalization. Some women who reported having walking or wheelchair privileges at the first interview had bedrest ordered in their charts and reported having bedrest as their allowed activity at subsequent interviews. None of the women reported that they were on bedrest who had a greater range of activity ordered on their chart.

Some women who were on bedrest admitted that they walked around the unit to visit other patients or spent longer periods of time than necessary in the bathroom.

It was of interest to note that most women (*n*=16) were observed to be wearing hospital nightgowns at the interviews. This did not seem to vary with the time of day, gestation, or diagnosis. Of the four women who wore their own clothing, only two wore clothing that would not be classified as pyjamas or nightwear.

Comparison of the Sample with Normative Data

Demographic characteristics of the study sample were compared with available data from the study unit, and city and provincial statistics. The mean length of stay on the antenatal unit in 1988 was 7 days, compared to 16.4 for the study sample.

Chi-square analysis of the admitting diagnoses for the sample using the 1988 statistics from the study unit as expected frequencies, revealed that the sample was not "typical" of the unit. Forty per cent of the women in the study were admitted for premature labour. Premature labour made up 13 per cent of the diagnoses on the study unit. This difference may, in part, be accounted for by the inclusion of non-high risk diagnoses such as elective caesarian section, full term induction and full term false labour in the unit statistics. However, when these groups are removed from the analysis, premature labour still accounts for only 15 per cent of the admitting diagnoses. Detailed data for admitting diagnoses which may have made it possible to compare diagnoses of women who stayed longer than seven days on the unit were not available.

Chi-square analysis of age and marital status for the sample using city and province statistics as the expected frequencies demonstrated no significant differences between the sample and the city or province.

Stressor Categories

The women identified numerous stressors during the interviews. A total of 266 stressors were identified at first interviews, 154 at second, 83 at third, 48 at fourth, 39 at fifth, 26 at sixth, and 8 at the seventh interview. The reduction in numbers of stressors reflects the diminishing sample size as the number of interviews, and therefore, the length of hospitalization, increased (Table 4.1). For example, only three subjects were hospitalized long enough to have a fifth interview, two for a sixth interview and one for a seventh interview. Mean numbers of stressors for each interview (total number of stressors / number of subjects interviewed) were 8.9 (first interview), 9.6 (second interview), 9.2 (third interview), 12 (fourth interview), 13 (fifth interview), 13 (sixth interview), and 8 (seventh interview). Although a trend of increasing numbers of stressors as the length of hospitalization increased was noted, no significant differences in mean number of stressors were demonstrated through analysis of variance techniques.

Twenty six categories of stressors were formulated through content analysis of the specific stressors identified by the subjects (Table 4.2). Examples of specific stressors that were placed in each category can be found in Appendix G. The stressor categories can be

Table 4.1

Number of Subjects, Number of Stressors, Mean Number of Stressors, and Mean Rating of Stressors at Each Interview

Interview	Subjects *n*	Stressors *n*	Stressors *m*	Rating *m*
1	30	266	8.9	7.0
2	16	154	10.6	5.9
3	9	83	9.9	5.4
4	4	48	12.0	5.5
5	3	39	13.0	5.0
6	2	26	13.0	5.0
7	1	8	8.0	6.0

Table 4.2

Stressor Categories

STRESSORS RELATED TO PREGNANCY

- Physical Discomforts of Pregnancy
- Lifestyle Changes
- Body Image
- Unplanned Pregnancy
- Labour and Delivery
- Responsibility of Having a Baby

STRESSORS RELATED TO HAVING A HIGH RISK CONDITION

- Having a Complication
- Being Hospitalized
- Uncertainty
- Concern/Advice of Others
- Time

STRESSORS RELATED TO CONCERNS

- Concerns re Children at Home
- Concerns re Spouse
- Concerns re Fetus/Newborn
- Concerns re Finances
- Concerns re Job

STRESSORS RELATED TO BEING IN THE HOSPITAL

- Hospital Rules/Routines
- Treatments and Medications
- Communication with Health Professionals
- Activity Restrictions
- Social Isolation
- Sleep Disruption
- Leaving Things Behind/Undone
- Emotions
- Dependency/Loss of Control
- Boredom

grouped under four headings. The first is stressors related to pregnancy in general (six categories). The second group is being diagnosed with a high risk condition and subsequently having to be hospitalized (five categories). The third group is stressors related to concerns about others that are directly related to having a high risk condition and being hospitalized (five categories). The fourth group of stressor categories is stressors directly and indirectly related to the hospitalization experience (10 categories).

The categories of stressors identified are similar to categories described in the literature. For example, the group of stressor categories related to pregnancy are similar to categories identified by Arizmendi and Affonso (1987) and McGeary (1987) in studies of stressors of women throughout pregnancy and the postpartum period (ex. physical discomforts, labour and delivery and body image). The last three groups of categories are similar to stressors identified by other investigators such as Volicer (1973) in studies of medical and surgical hospitalization (ex. missing events, medications and having a sudden hospitalization) and White (1981) (ex. communication with health professionals, emotions, and separation from family), Snyder (1985) (ex. high risk condition, hospitalization, and loss of experiences of life) and Loos and Julius (1989) (ex. boredom, loneliness, and powerlessness) in studies of antepartum hospitalization.

Categories Related to Pregnancy

Physical Discomforts of Pregnancy

Specific stressors in this category include feeling tired, heavy, and uncomfortable.

Lifestyle Changes

This included stressors related to changes in socialization and habits because of pregnancy. The changes may have been done voluntarily by the woman because of the pregnancy, such as having to change eating habits or involuntarily such as not being able to drive because the woman can no longer reach the pedals.

Body Image

This included specific stressors related to changes in body image related to pregnancy such as getting bigger and as a result of pregnancy such as having as scar following a caesarian section.

Unplanned Pregnancy

This category included stressors related to feelings and consequences of having an unplanned and in some situations an unwanted pregnancy such as thinking about adoption.

Labour and Delivery

The specific stressors included in this category were related to concerns about the labour and delivery process such as being worried about having to have a general anaesthetic for an emergency caesarian section or about how labour would feel with twins.

Responsibility of Having a Baby

Stressors included in this category were related to concerns about the woman's ability to manage or cope with a new baby. These concerns may have been for the immediate postpartum period such as going home with a new baby and having to make immediate adjustments or for the woman's future as a parent such as arranging child care in the future.

Categories Related to Being Diagnosed as Having a High Risk Condition

The categories in this group are related to being diagnosed as having a high risk condition in this pregnancy. These categories are related to the specific experience of being classified as high risk. They include the physical, social and emotional impact of the high risk condition on the woman.

Having a Complication

The specific stressors included were related to direct effects, both physical and emotional, that the complication had on the woman such as pain and fear of recurrence of an event such as premature labour or bleeding.

Being Hospitalized

This is different from later categories specifically related to the hospitalization experience. This category ties the diagnosis of a complication with the further decision that hospitalization is necessary. Specific stressors included in this category included a feeling that being in hospital means something is wrong, a general fear of hospitals, and a preference to be home.

Uncertainty

This category included stressors that were related to a lack of knowledge of the diagnosis, the plan of management, and the course which the complication may be expected to take. Specific stressors categorized as uncertainty included "not knowing what is going on with myself" and "frustration that I don't know what's happening".

Concern or Advice of Others

This category is related to the concern or advice of others about their pregnancy and more specifically about the high risk condition. Stressors included in this category included feelings that others, such as family members, were overly concerned, feelings that people were minimizing their experience by telling them not to feel guilty, and feelings that people were trying to make them feel guilt by suggesting that they might have contributed to the high risk condition by actions such as "working too hard".

Time

This category referred to stressors that reflect how the complication is measured in terms of time. Specific stressors included sitting around waiting and concerns regarding the length of the hospitalization.

Categories Related to Concerns for Others

Five categories are related to concerns for others. In general, these concerns result directly from the complication and/or the hospitalization.

Concerns Regarding Children

Stressors included in this category were related to missing children, being concerned about obtaining adequate child care, and being concerned about the health and/or safety of the children while the woman was in hospital.

Concerns Regarding the Spouse

The specific stressors included concerns about the needs of the spouse for support both physical, such as making adequate meals, and emotional, such as needs for support related to job-related stress. Stressors related to changes in the relationship with the spouse resulting from the complication were also included in this category.

Concerns Regarding the Fetus and/or Newborn

The stressors were related to concerns about the real or imagined risk of losing the fetus or newborn and the likelihood of having a healthy or handicapped child.

Concerns Regarding Finances

Although this category does not directly relate to concerns about others, the financial concerns directly or indirectly impact on the woman and her family. The specific stressors categorized as concerns related to finances included the loss of wages because of the high risk condition, the additional financial burdens such as full time help required because of hospitalization, and future financial concerns such as the cost of raising twins.

Concerns Regarding the Woman's Job

The stressors in this category reflect the concerns that women may experience when they have had to leave a job before they had planned in order to be hospitalized for treatment of their high risk condition. Specific stressors included leaving things incomplete at work and having to turn work projects over to others.

Categories Related to Being in the Hospital

Ten categories are related to being in the hospital. These categories specifically address the stressors resulting from the hospitalization experience.

Hospital Rules and Routines

The stressors included in this category reflect frustrations and concerns that arose from specific rules and routines set by the hospital. Specific stressors included not knowing who among the hospital staff is responsible for what tasks, being moved to the postpartum unit when the delivery suite wishes to use the antenatal unit for overflow beds, and not being able to have one's own doctor do the delivery. In some situations, the stressor was related to an aspect of the hospital environment such as the noise of the telelift system. However, since it was the routine of the hospital to run the telelift 24 hours a day, this stressor was placed in this category.

Treatments and Medications

The stressors in this category included concerns about the safety of medications and diagnostic tests, worries about their future health, for example, if given a blood transfusion, and discomfort and/or pain related to treatments such as intravenous and medications such as tocolytic drugs.

Communication with Health Professionals

The stressors in this category were both self-originated such as finding it difficult to communicate with nurses or doctors and professional originated such as not getting questions answered.

Activity Restrictions

The specific stressors included in this category were related to concerns, frustrations, and discomforts of having restricted activity and to concerns about the effects that prolonged activity restriction may have on their health, ability to deliver, and ability to cope with a new baby.

Social Isolation

This category included stressors related both to the separation from family and friends and to the general feelings of isolation experienced while in hospital. Stressors related to loneliness were included in this category.

Sleep Disruption

Stressors included the lack of ability to sleep or rest and environmental factors that were identified as interrupting sleep or rest.

Leaving Things Behind or Undone

The stressors included in this category were related to concerns and frustrations about missing events because of being hospitalized. Some stressors were related to specific events such as a wedding. Others were more general such as being able to shop for baby things and witnessing developmental milestones within the family.

Emotions

The stressors categorized as emotions were reported emotional strains related to being in hospital such as feeling an expectation that one had to be "cheerful", feeling guilt and not having a direction.

Dependency and/or Loss of Control

The stressors included in this category were related to feelings, frustrations, and concerns about having to rely or depend upon others.

Boredom

The stressors included in this category were reports of feeling bored or of having nothing to do.

Frequency of Stressors

The total number and frequency (number of stressors in one category/total number of stressors) of individual stressors identified for each category were calculated for each interview. The significance of the difference in numbers of stressors in each category was tested with chi-square analysis using equal distribution of frequency as the expected value.

Effect of Time on Frequency of Stressors

The most frequently identified stressors for each of the interviews can be found in Table H-1. The changes in patterns of frequency throughout interviews one to three are found in Figure 4.1. Generally, the stressors that were most frequently identified are related to the last three groups of categories: having a complication, concerns for others and the hospitalization experience. Specifically, the categories that were frequently identified were activity restrictions, communication with health professionals, social isolation, concerns regarding children, hospital rules and routines, concerns regarding finances, and time. The only exception to this is that lifestyle changes, a stressor related to pregnancy in general, was the fourth most frequent (9 instances, 6%) at the second interview and the third most frequent (6 instances, 7%) at the third interview.

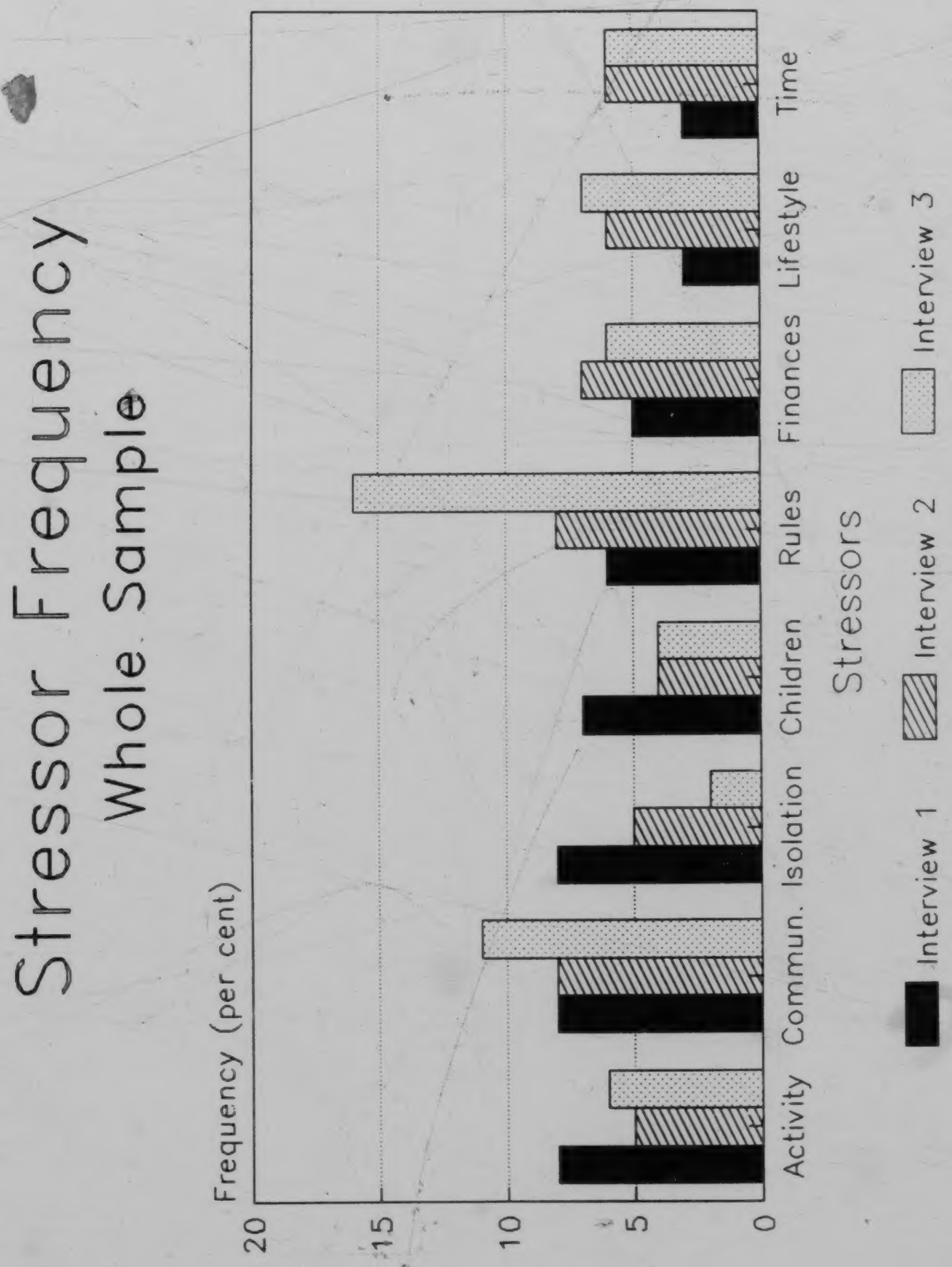


Figure 4.1

Stressor Frequency, Whole Sample

At interview one, the most frequently identified stressors were activity restriction (21 instances, 8%), communication with health professionals (20 instances, 8%), and social isolation (20 instances, 8%). At interview two, the most frequently identified stressors were hospital rules and routines (12 instances, 8%) and communication with health professionals (12 instances, 8%). At interview three, the most frequently identified stressor was hospital rules and routines (13 instances, 16%). At interview five, the most frequently identified stressor was hospital rules and routines (9 instances, 21%). No significant differences in stressors frequency could be demonstrated for interviews four, six and seven.

Analysis of the changes in frequency of each of the stressor categories was carried out using chi-square with the frequency of identification calculated for the first interview as the expected frequency for the subsequent interviews. With the exception of the stressor categories hospital rules and routines and labour and delivery (Figure 4.2), no significant differences in stressor frequency over time could be demonstrated. The frequency of identification of the stressor category hospital rules and routines increased in subsequent interviews, from a frequency of 6% at the first interview to a peak of 21% at the fourth and fifth interviews (Figure 4.2). The frequency of identification of labour and delivery as a stressor also increased in subsequent interviews from an initial frequency of 3% to a peak of 12% at the sixth interview (Figure 4.2). The frequencies reported for the fourth to seventh interviews must be interpreted with some caution. These represent the stressors

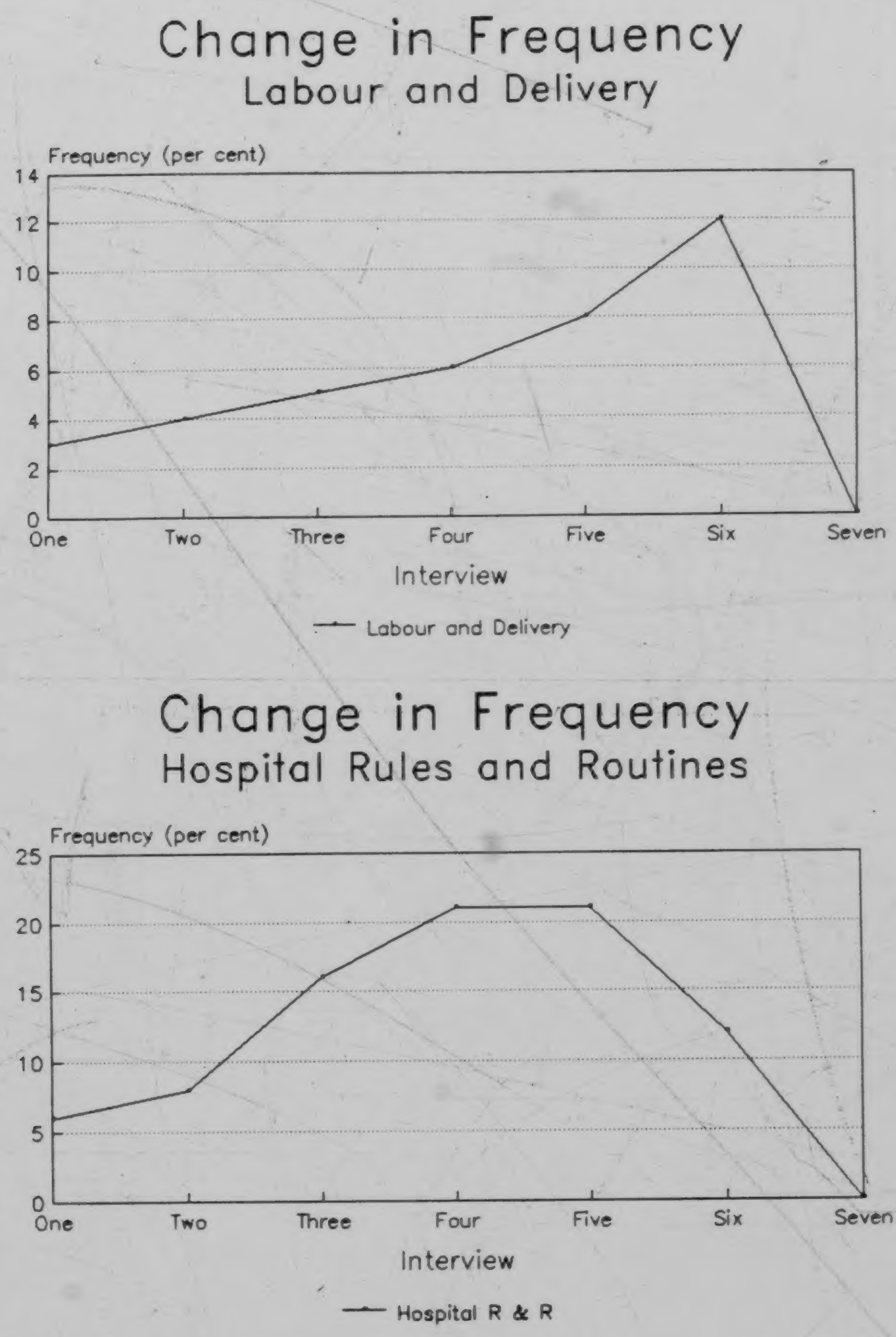


Figure 4.2

Change in Frequency of Stressor Identification over Time for Labour and Delivery and Hospital Rules and Routines identified by a few women and may have been influenced by a particular area of concern of one woman. For example, one subject who had six interviews identified three stressors that were categorized as labour and delivery.

Since there were sub-groups within the sample that may have had a different pattern of stressor identification, additional analyses of the frequency of stressors was done for interviews one, two, and three. No further analysis of stressor frequency was done in interviews four, five, six, and seven because the number of women in these groups was very small. These further analyses were done to clarify patterns of stressor identification. They were not meant to imply correlation or causation of the sub-group variable, for example, presence of children at home, and the pattern of stressor identification. Additional clarity would have been achieved through analyses of sub-groups based on several variables, for example women 25-28 weeks gestation, who were working outside the home, and who had children at home. However, the size of such sub-groups was too small to obtain any significant results.

Stressor Frequency and Presence or Absence of Children at Home

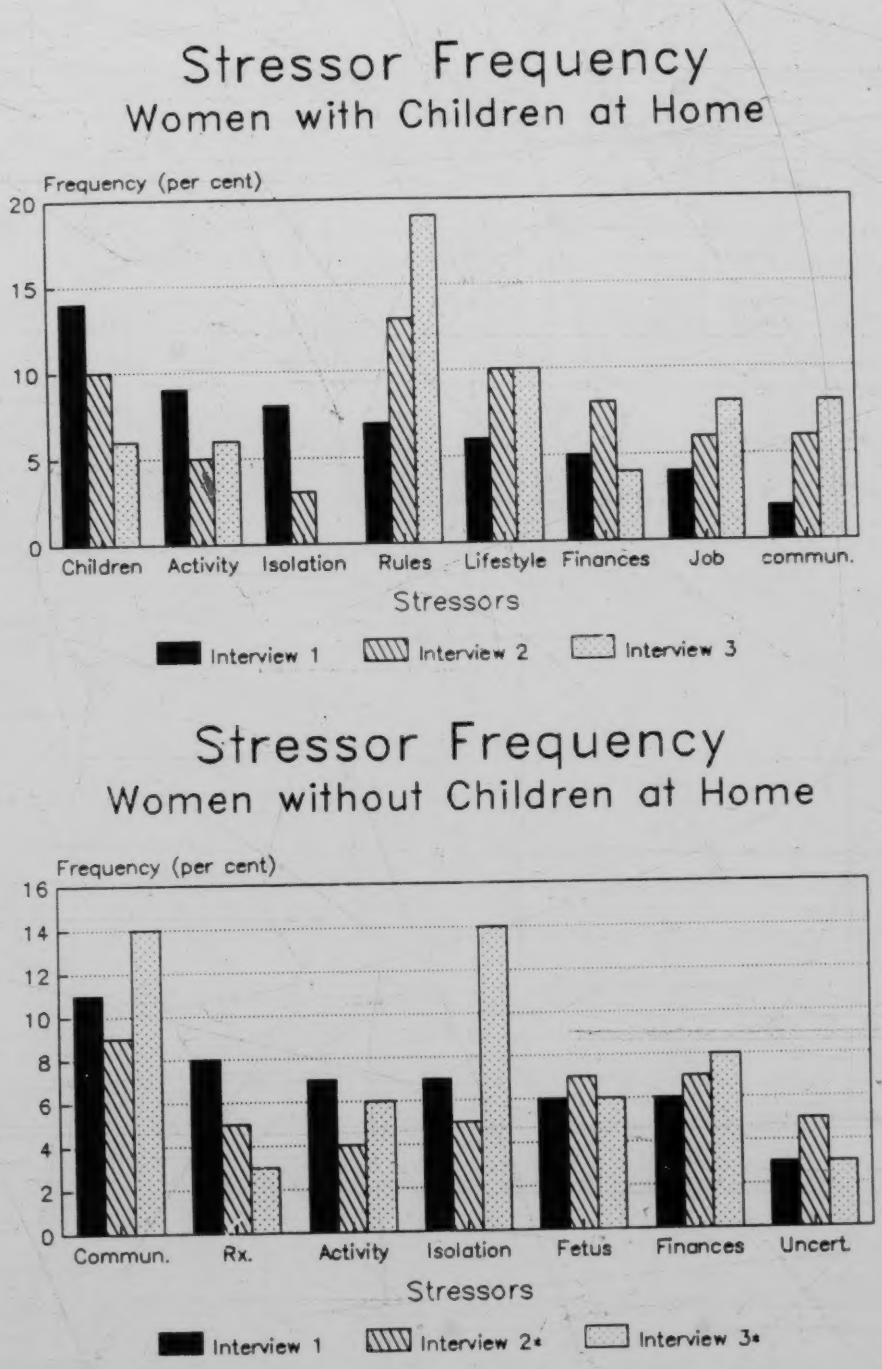
Since women without children at home would not identify concerns about children as a stressor, stressor frequencies could differ depending on the presence or absence of children. Therefore, separate analyses were undertaken for women with children (n=18) (Table H-2) and women without children (n=12) (Table H-3).

Women with Children at Home

As with analysis of the whole sample, the stressors that were most frequently identified by the sub-group of women with children at home were generally related to the high risk condition and the hospitalization experience, specifically, concerns regarding children, activity restrictions, social isolation, hospital rules and routines, concerns regarding finances, concerns regarding job and communication with professional. Again, the only exception was lifestyle changes which ranked fifth at the first interview (9 instances, 6%) and second at the second (6 instances, 10%) and third (5 instances, 10%) interviews. At the first interview, the stressor that was most frequently identified by women with children at home was concerns about children (19 instances, 14%). Hospital rules and routines was the stressor most frequently identified by this group at the second (8 instances, 13%) and the third (9 instances, 19%) interviews (Figure 4.3).

Women without Children at Home

Among women without children at home, the most frequently identified stressors were related only to the high risk condition and to the hospitalization experience, specifically, communication with health professionals, treatments and medications, activity restrictions, social isolation, concerns regarding the fetus, concerns regarding finances and uncertainty. The stressor most frequently identified by women without children at their first interview was communication with health professionals (14 instances, 11%). In this sub-group, the stressor concerns regarding the fetus was found to rank as fifth most frequent (8 instances, 6%). This is



* No significant differences found

Figure 4.3

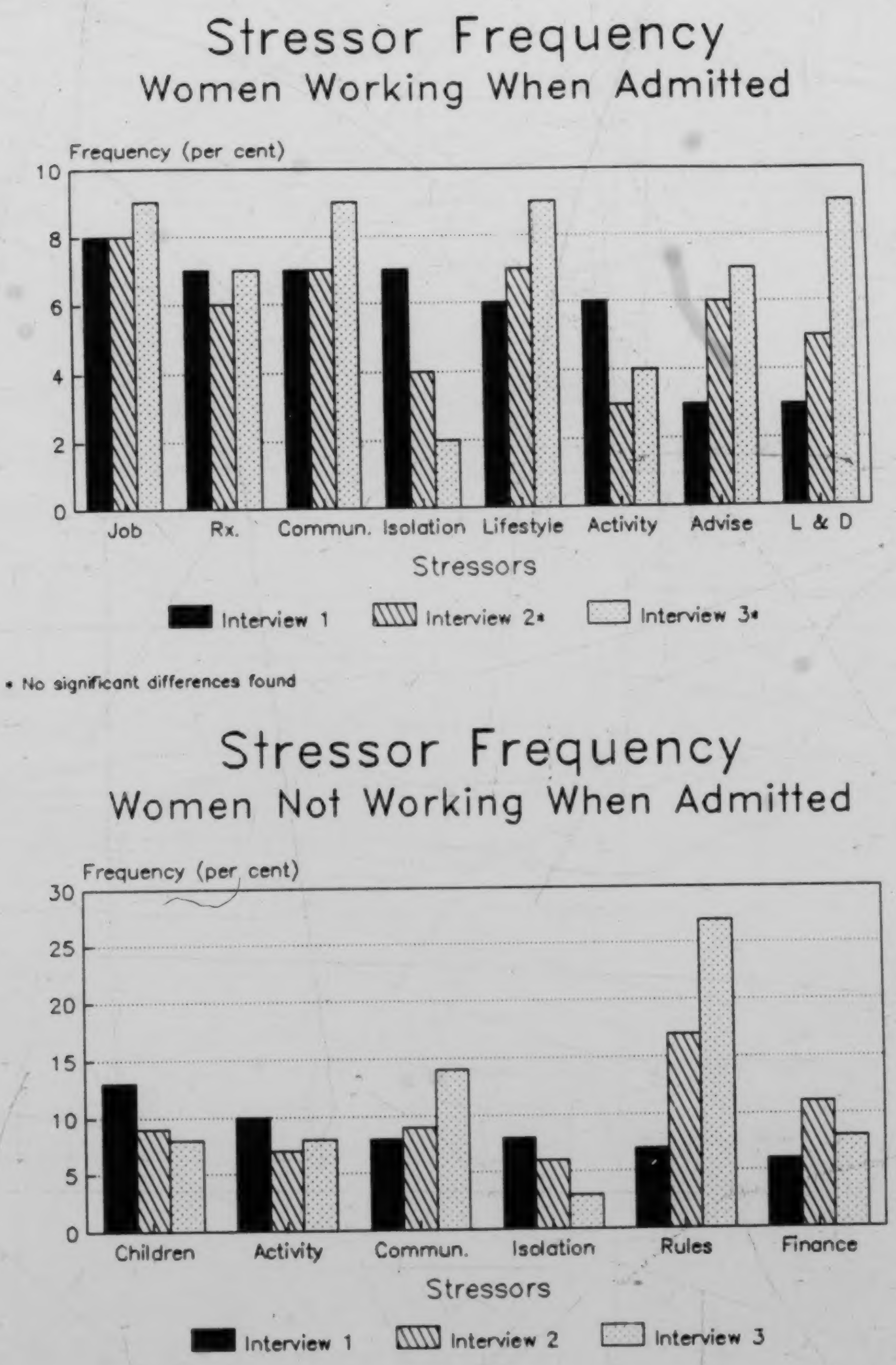
Stressor Frequency - Women with Children, Women without Children the only sub-group in which this stressor was found to be significantly ranked as a frequently identified stressor. No significant differences in stressor frequency could be identified for this group in interviews two and three (Figure 4.3).

Stressor Frequency and Employment at the Time of Admission

Women who were not working outside the home are not likely to identify concerns about their job as a stressor. Stressors related to work inside the home such as housework and family responsibilities were classified in other categories. Therefore, frequency analysis was done among women working at the time of admission (*n*=14) (Table H-4) and among women not working at the time of admission (*n*=16) (Table H-5).

Women Employed at the Time of Admission

The stressor most frequently identified by working women at their first interview was concerns about their job (11 instances, 8%). With the exception of lifestyle changes (9 instances, 6%), all the stressors which were most frequently identified by these women were either directly or indirectly related to the high risk condition and to the hospitalization experience including treatments and medications, communication with health professionals, social isolation, activity restrictions. Although some of the women who were working outside the home when they were admitted had children at home (*n*=6), the stressor "concerns regarding children" was not frequently identified (3 instances, 2%). No significant differences in stressor frequency could be identified for this group in interviews two and three (Figure 4.4).



* No significant differences found

Figure 4.4

Stressor Frequency - Women Working, Women not Working

Women not Employed at the Time of Admission

Among women not working at the time of admission, all stressors that were ranked as being frequently identified for interviews one, two, and three were related directly or indirectly to the high risk condition and to the hospitalization experience, specifically, concerns regarding children, activity restriction, communication with health professionals, social isolation, hospital rules and routines, and concerns regarding finances. At the first interview, the stressor most frequently identified by women not working at the time of admission was concerns about children (16 instances, 13%). Concerns about children remained within the five most frequently identified stressors in this group for interviews two (5 instances, third) and three (3 instances, third). The category hospital rules and routines was the stressor most frequently identified by this group at the second (9 instances, 17%) and third (10 instances, 27%) interviews (Figure 4.4). It is of interest that no women who were unemployed at the time of admission identified job or career-related stressors. Some of these women had been working outside the home earlier in their pregnancies and were intending to return to work sometime following the birth.

Stressor Frequency and Gestation

Gestation may influence the pattern of stressor identification observed. In earlier studies (Arizmendi & Affonso, 1987; McGeary, 1987) differences in stressor frequency throughout pregnancy was reported. Therefore, frequency of stressor identification was analyzed in three sub-groups of 25 to 28 weeks (*n*=7) (Table H-6), 29 to 32 weeks (*n*=11) (Table H-7), and 33 to 36 weeks (*n*=12).

Women 25 to 28 Weeks Gestation

All stressors that were ranked as being frequently identified among women 25 to 28 weeks gestation at admission were directly or indirectly related to the high risk condition and hospitalization experience, specifically, communication with health professionals, hospital rules and routines, concerns regarding children, concerns regarding finances, activity restriction, time and treatments and medications. The stressor category most frequently identified by these women was communication with health professionals at the first (11 instances, 14%) and second (9 instances, 13%) interviews. At the third interview, the most frequently identified stressor was hospital rules and routines (9 instances, 19%) (Figure 4.5).

Women 29 to 32 Weeks Gestation

At the first interview, the stressor most frequently identified by women who were between 29 and 32 weeks gestation at admission was activity restrictions (11 instances, 10%). With the exception of lifestyle changes (8 instances, 8%), all the stressors that were most frequently identified by this group at the first interview were directly or indirectly related to the high risk condition and the hospitalization experience including activity restriction, treatments and medications, social isolation, concerns regarding job and communication with health professionals. No significant differences in stressor frequency could be demonstrated among women in this group at the second and third interviews (Figure 4.6).

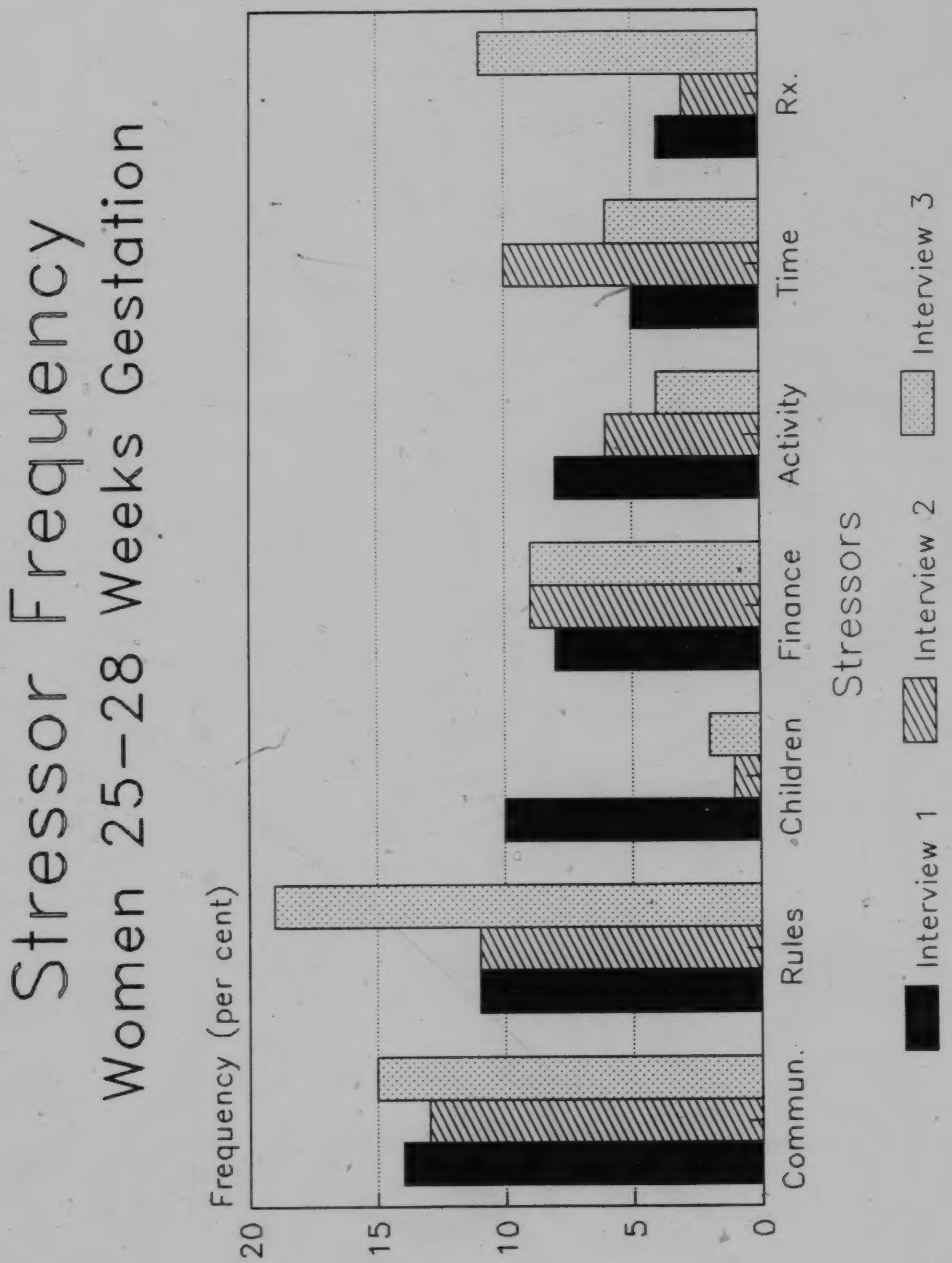


Figure 4.5

Stressor Frequency - Women 25 to 28 Weeks Gestation

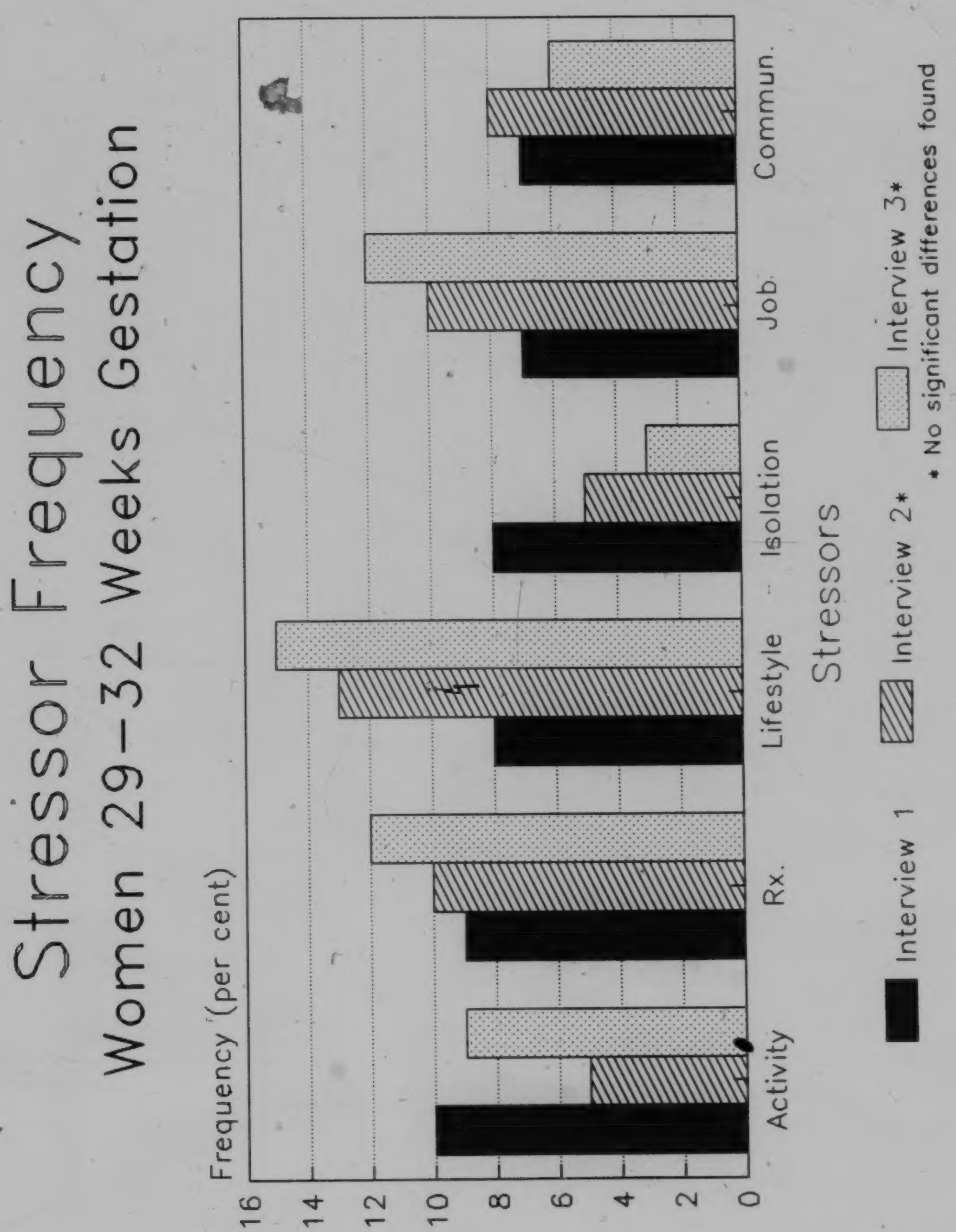


Figure 4.6

Stressor Frequency - Women 29 to 32 Weeks Gestation

Women 33 to 36 Weeks Gestation

No significant differences in stressor frequency could be demonstrated among women 33 to 36 weeks gestation for the first and second interviews. Nine stressors were identified among women in this group at the third interview. Of these, hospital rules and routines was most frequently identified (3 instances, 33%). Other stressors that in which a frequent trend was observed were concerns regarding children, social isolation, physical discomforts, lifestyle changes, concerns regarding the spouse, concerns regarding the fetus, concerns regarding finances, and concerns regarding job (Figure 4.7).

Summary

Stressors directly and indirectly related to the high risk condition and to the hospitalization experience were the categories of stressors most frequently identified among the women in the sample. Although some variation in pattern of ranking of frequencies could be demonstrated through analysis of sub-group stressor identification, the stressors that were most frequently identified remained consistent. The stressors most often found to be ranked as most frequent within the whole sample and the sub-groups included: activity restriction, social isolation, communication with health professionals, concerns regarding children, hospital rules and routines, treatments and medications, and concerns regarding a job. Lifestyle change was the only stressor related to pregnancy in general which ranked as a frequent stressor. Hospital rules and routines and labour and delivery were the only stressor categories for which significant differences in frequency of identification over

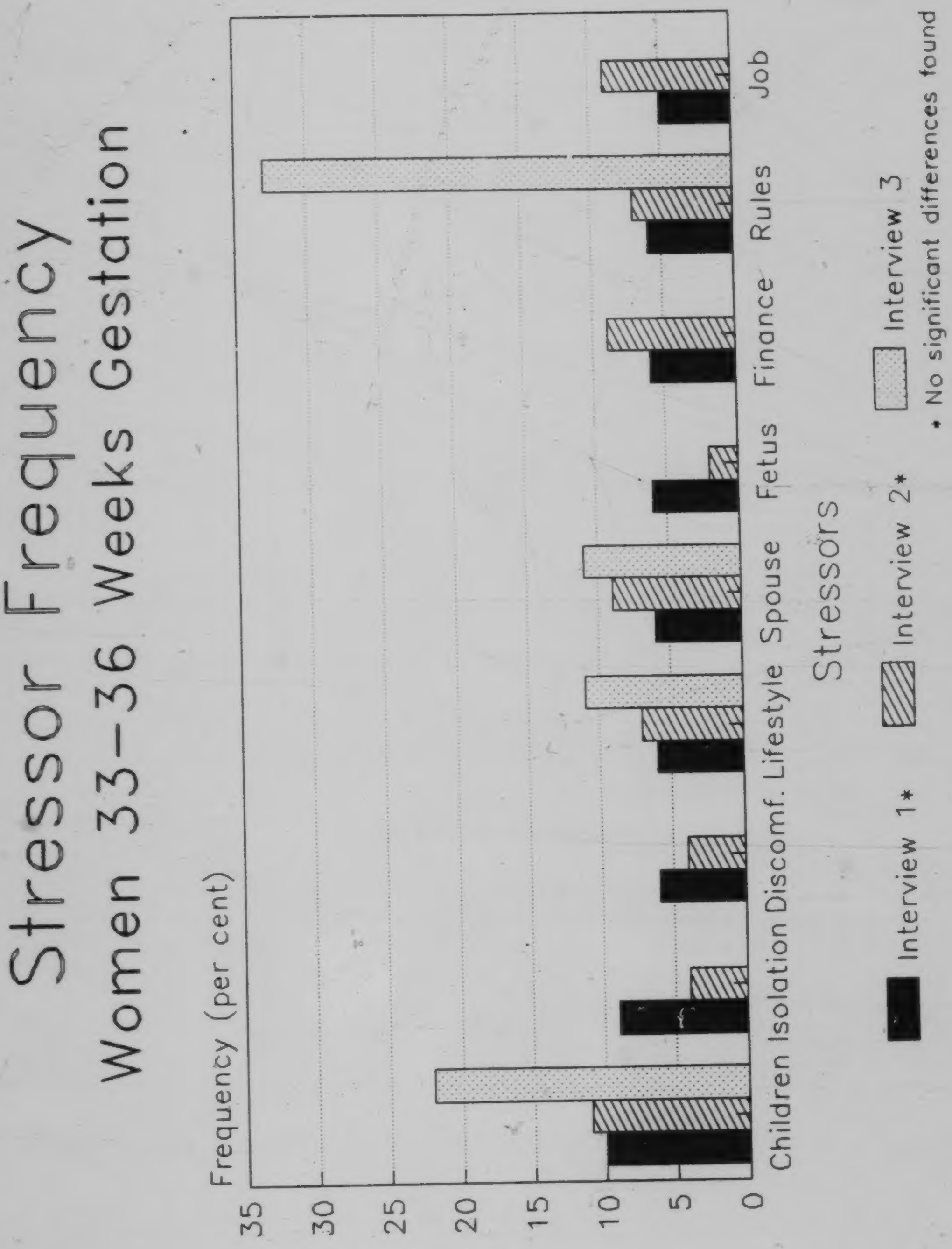


Figure 4.7

Stressor Frequency - Women 33 to 36 Weeks Gestation

time could be demonstrated. For both, the general trend was toward an increase in frequency of identification.

Stressor Intensity

The women were asked to rate the stressors that they identified on a scale of 1 to 10 with 1 representing lowest intensity and 10 representing highest intensity. Analysis of variance techniques were used to examine differences in mean stressor intensity ratings at interviews one, two, and three for the whole sample and those sub-groups previously identified.

Effects of Time on Stress[illegible] Intensity

As in the analysis of frequency of stressor identification, the stressors found to be rated as most intense among the whole sample were generally related to the three groups of stressor categories related directly and indirectly to the hospitalization experience and to the high risk condition, specifically, concerns regarding children, uncertainty, boredom, concerns regarding the fetus, being hospitalized, and treatments and medications (Rx.) (Figure 4.8). The one exception was labour and delivery which is a stressor category related to pregnancy in general (M=8.8, first interview). In analysis of the whole group, concerns about children (M=9.1) at the first interview and treatments and medications (M=9.3) at the third interview were found to have the highest mean ratings (Table I-1). No significant differences were found in mean stressor intensity ratings at the second interview (Table J-1). Both similarities and differences were found between the patterns of stressors that were most frequently identified and patterns of stressors that were rated

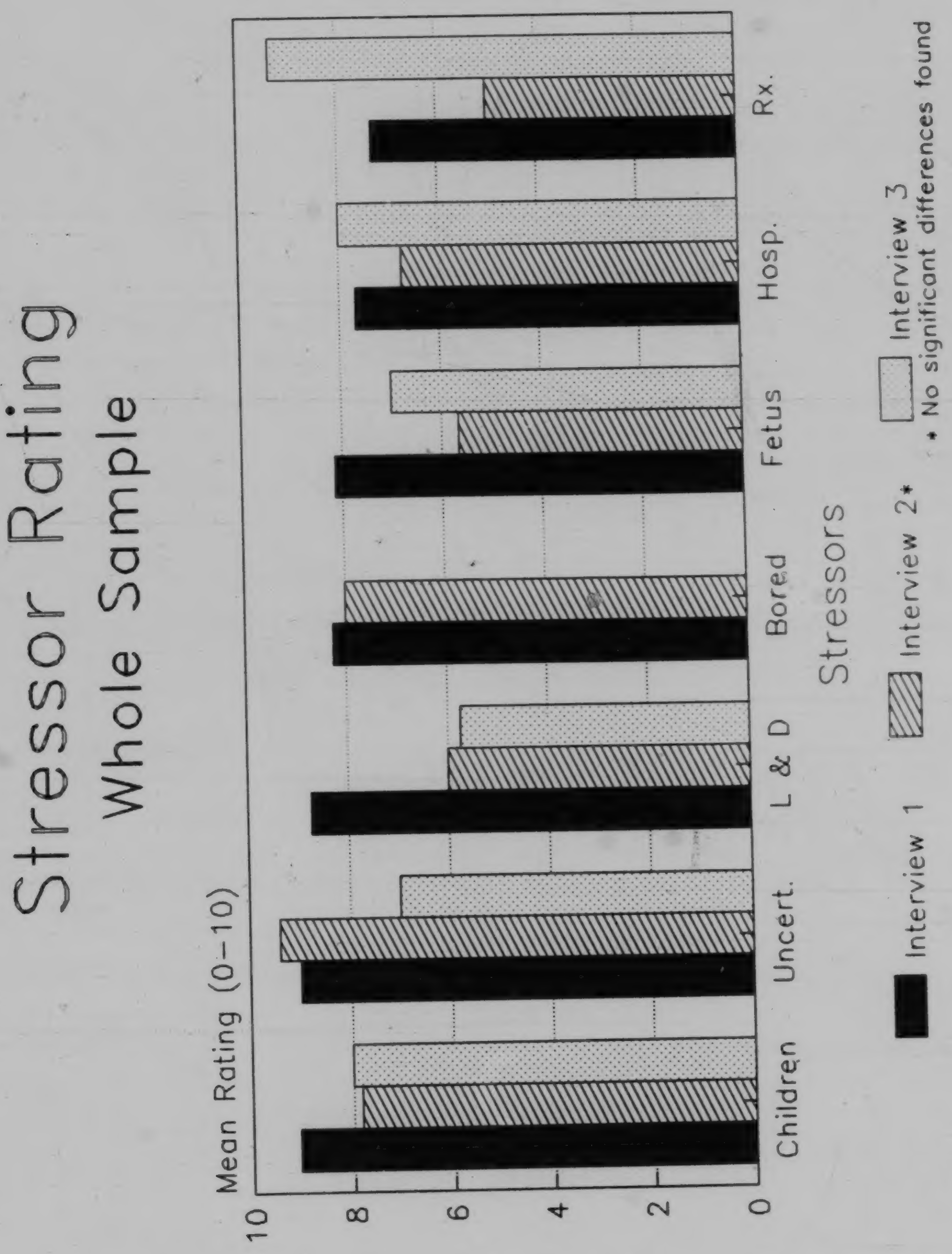


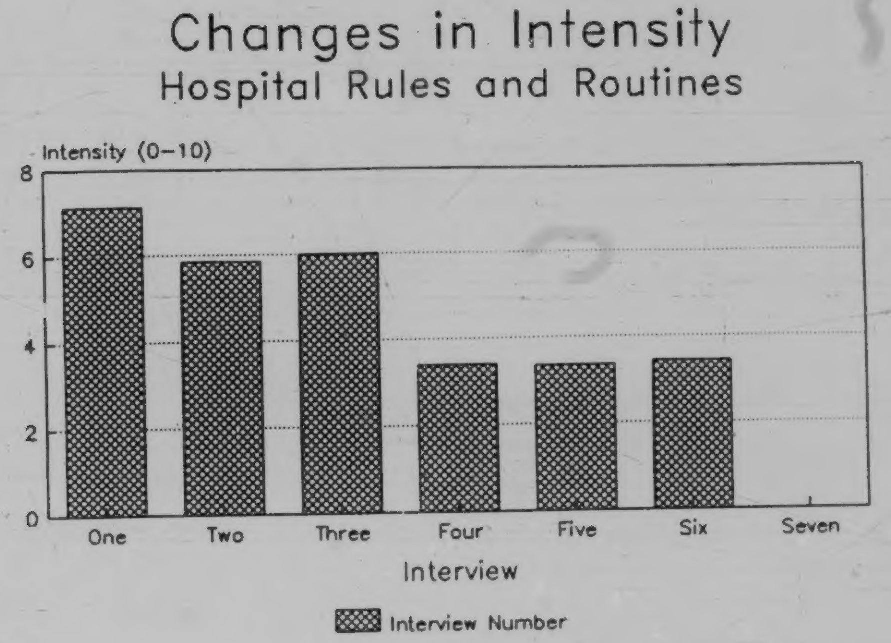
Figure 4.8

Stressor Rating - Whole Sample

as being most intense. For example, the categories concerns regarding children and treatments and medications were both frequently identified and rated as highly intense, whereas the categories uncertainty and boredom were not often identified but were rated as highly intense.

Analysis of variance techniques were used to examine the differences in mean intensity ratings of individual stressor categories over time. It was possible to demonstrate significant differences among the mean intensity ratings for six stressor categories (Figure 4.9): labour and delivery, having a complication, uncertainty, concern regarding the fetus, concern regarding job, and hospital rules and routines. The general trend in all six categories was that the mean rating of intensity decreased as time passed. For example, the mean rating for hospital rules and routines at interview one was 7.1 and at interview seven, it was 3.4. An examination of the "grand means" calculated in the analysis of variance procedure reveals a tendency for the overall intensity of all stressors to decrease as time passed. For example, the grand mean intensity for the whole group was 7.0 at the first interview, 5.9 at the second interview, and 5.4 at the third interview.

Some caution is advised in the interpretation of intensity ratings, particularly in later interviews. Some stressors may have been only identified once, but were rated as highly intense by that one woman. For example, among women 25 to 28 weeks gestation, sleep was rated as one of the most intense stressors at the second



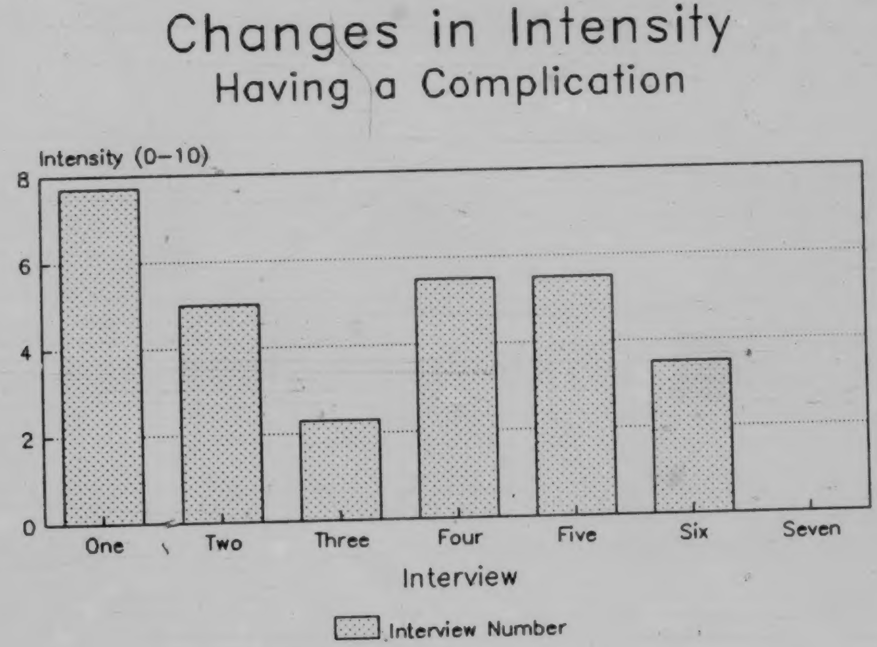
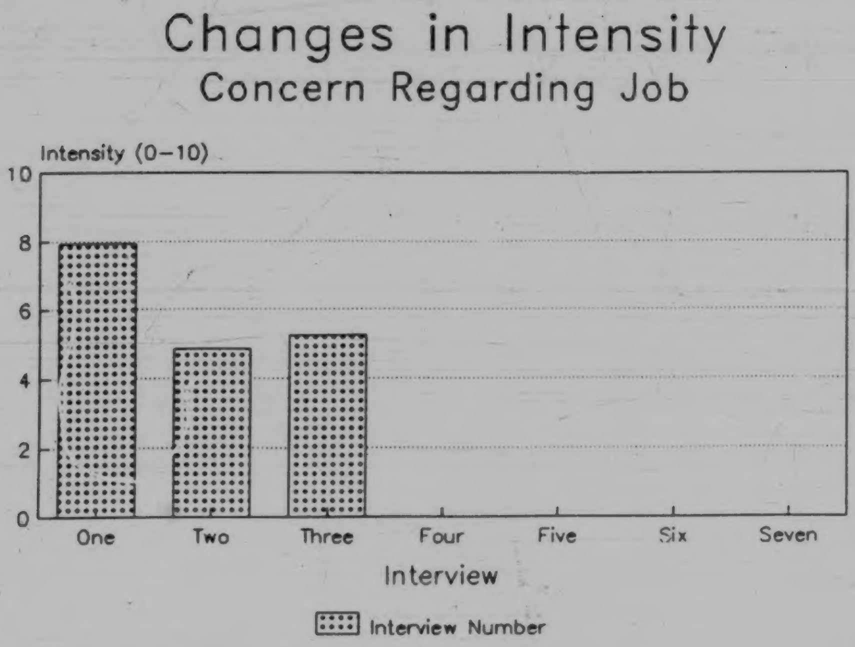


Figure 4.9

Changes in Stressor Intensity over Time



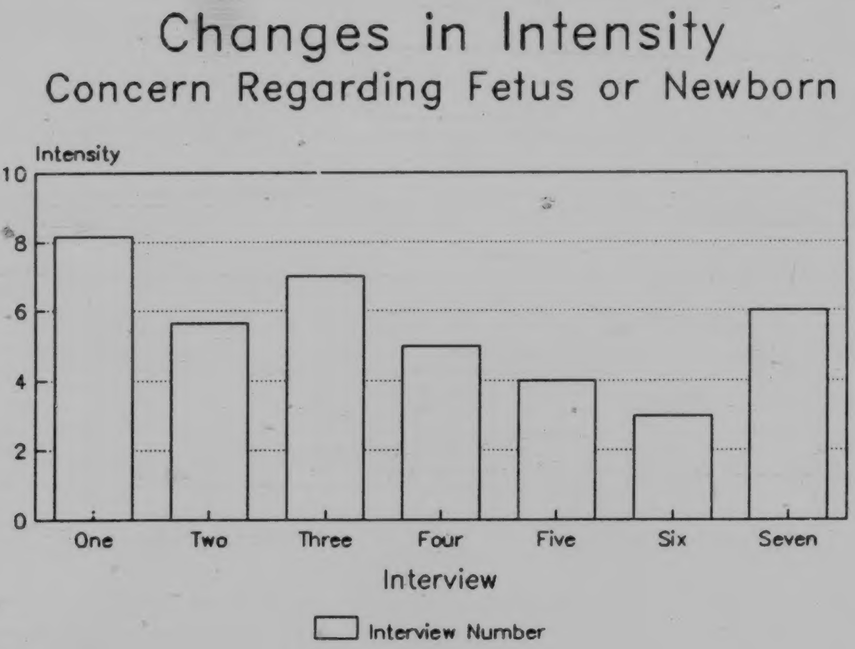
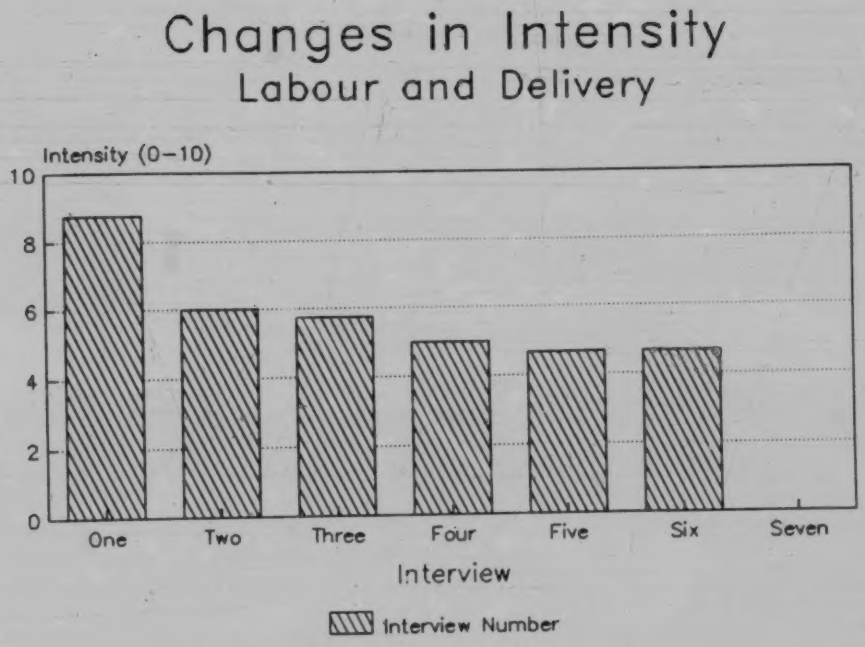


Figure 4.9 (continued)



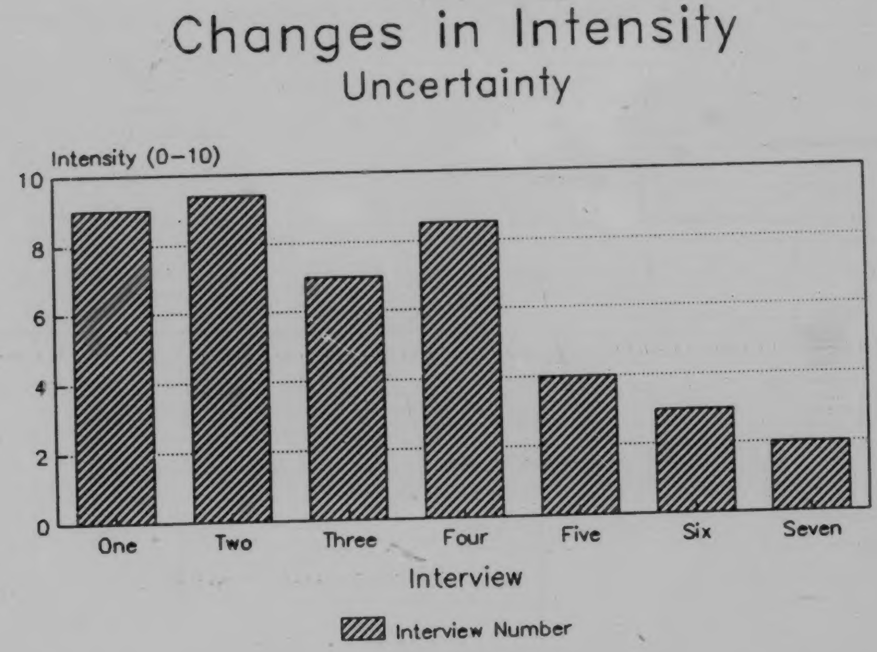


Figure 4.9 (continued)

interview (*M*=10.00). However, sleep was identified by only one woman in this sub-group.

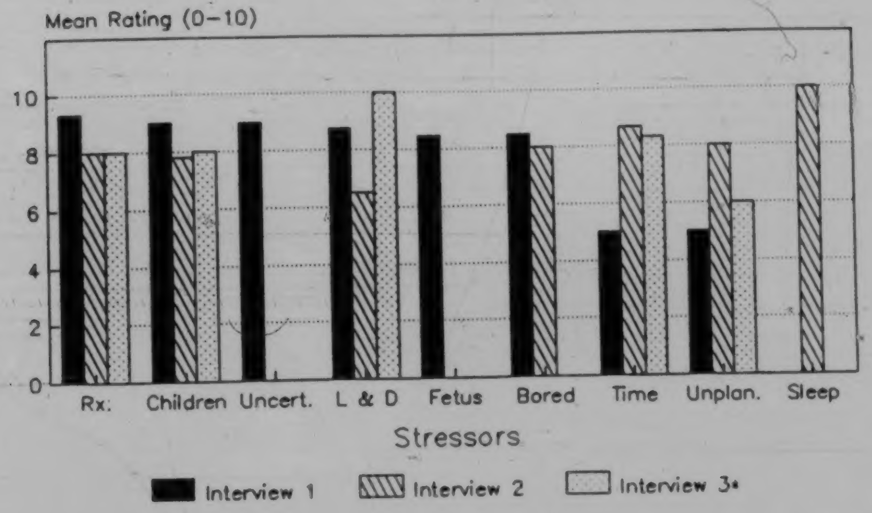
Stressor Intensity and Presence or Absence of Children at Home

Women with Children

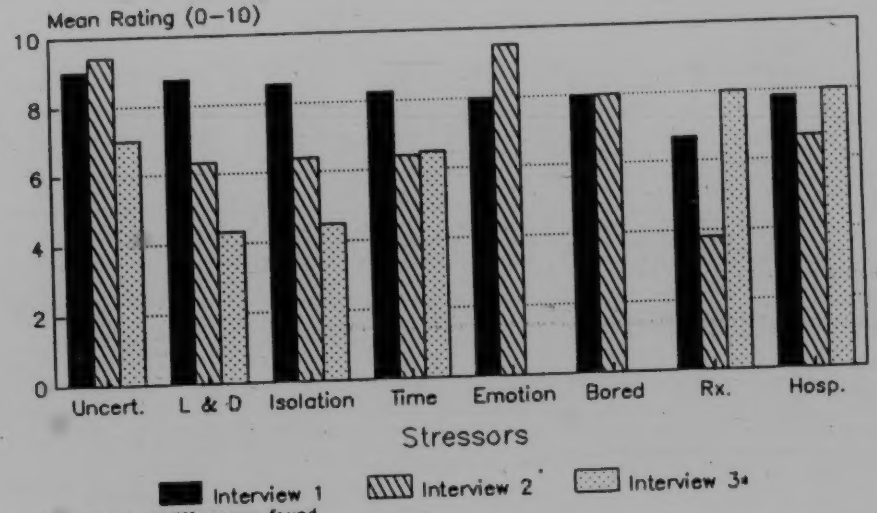
Among women with children, stressors rated as most intense were generally related directly or indirectly to the high risk condition and the hospitalization experience (Table I-2), specifically treatments and medications, concerns regarding children, uncertainty, concerns regarding the fetus, boredom, time, and sleep (Figure 4.10). Exceptions to this were the ranking of labour and delivery as fourth most intense (*M*=8.8) at the first interview and as the most intense (*M*=10.0) at the third interview, and the ranking of unplanned pregnancy as the third most intense (*M*=8.0) at the second interview. In this group, treatments and medications (*M*=9.3) at the first interview and sleep disruption (*M*=10.0) at the second interview had the highest intensity ratings. No significant differences in mean rating could be demonstrated in this group for the third interview (Table J-2).

Women without Children

With the exception of labour and delivery (*M*=8.8, first interview), all the stressors that ranked as being most intense among women without children at home were related to the high risk condition and to the hospitalization experience (Table I-3). Stressors that were rated as being very intense included uncertainty, social isolation, time, emotions, boredom, treatments and medications, and being hospitalized (Figure 4.10). Among this group


Stressor Rating
Women with Children at Home

* No significant differences found


Stressor Rating
Women without Children at Home

* No significant differences found

Figure 4.10

Stressor Rating - Women with Children, Women without Children uncertainty (*M*=9.0) at the first interview and emotions (*M*=9.5) at the second interview were found to be the highest rated categories. No significant differences in mean rating could be demonstrated in this group for the third interview (Table J-3).

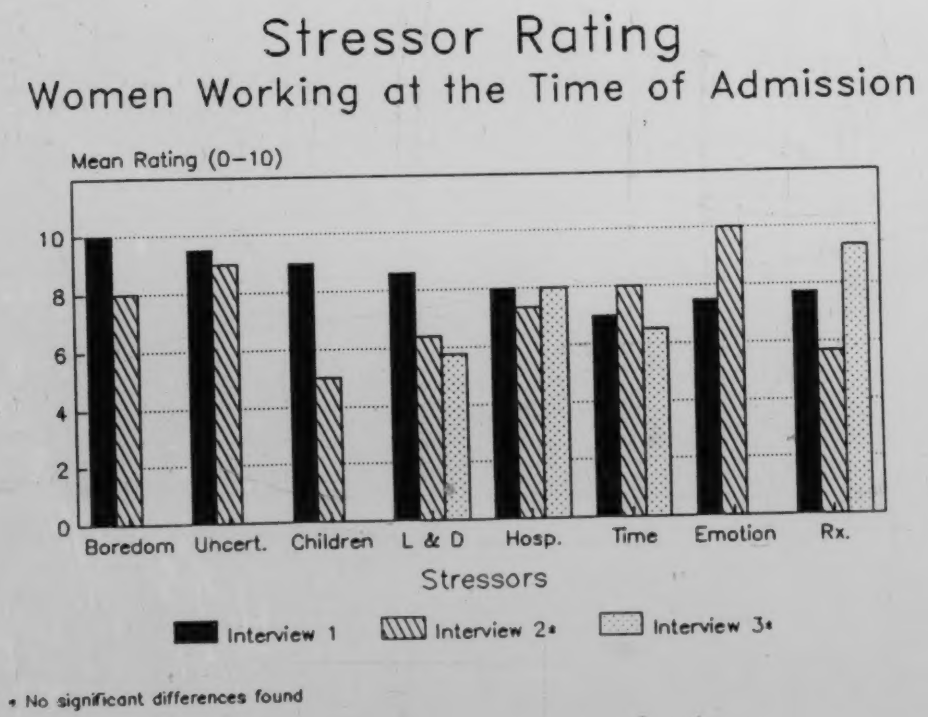
Stressor Intensity and Employment at the Time of Admission

Women Employed at the Time of Admission

With the exception of labour and delivery (*M*=8.6, first interview), all the stressors that were ranked as being most intense among women who were working at the time of admission were related to the high risk condition and to hospitalization (Table I-4) specifically, boredom, uncertainty, concerns regarding children, being hospitalized, time, emotions and treatments and medications (Figure 4.11). Differences in mean intensity ratings were found among these women at the first interview with boredom (*M*=10.0) rated highest. No significant differences in mean rating could be demonstrated for this group for the second and third interviews (Table J-4).

Women Unemployed at the Time of Admission

Among women not working outside the home, no significant differences could be found for mean intensity ratings at any interview (Figure 4.11). The pattern of intensity rating among this group is similar to other groups examined, with stressors such as labour and delivery, having a complication, uncertainty, concerns regarding children, and missing events having the tendency to be rated as highly intense (Table J-5).



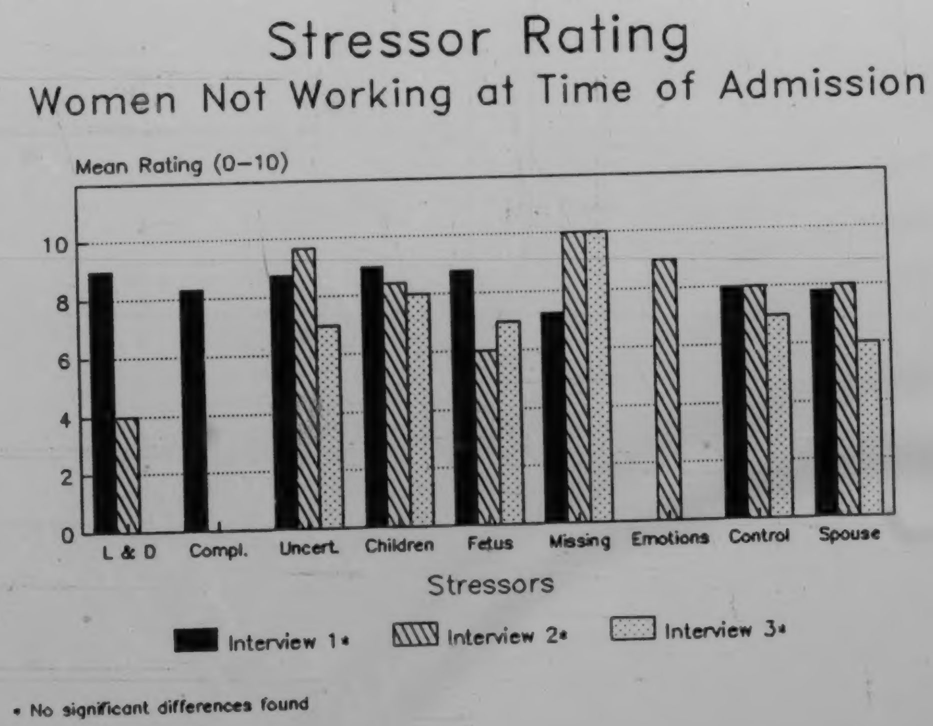


Figure 4.11

Stressor Rating - Women Working, Women Not Working

Stressor Intensity and Gestation

Mean intensity ratings were analyzed using three different gestational age groupings for interviews one, two, and three.

Women 25 to 28 Weeks Gestation

With the exception of labour and delivery (*M*=9.3, first interview), all stressors that were rated as being highly intense by women 25 to 28 weeks gestation were related to the high risk condition and the hospitalization experience (Table I-5) specifically, concerns regarding children, concerns regarding spouse, concerns regarding the fetus or newborn, being hospitalized, uncertainty, sleep, emotions, dependency or loss of control, and treatments and medications (Figure 4.12). At the first interview, these women rated concerns about children (*M*=10.0) and concerns about spouse (*M*=10.0) as the most intense stressors. No significant differences among the mean ratings could be demonstrated for the second and third interviews in this group (Table J-6).

Women 29 to 32 Weeks Gestation

Women between 29 and 32 weeks generally rated stressors related to the high risk condition and the hospitalization experience as most intense (Table I-6) specifically, uncertainty, boredom, concerns regarding children, having a complication, being hospitalized, concerns regarding the fetus or newborn and treatments and medications (Figure 4.13). A notable exception is that among these women, labour and delivery had the highest mean rating (*M*=10.0) at the first interview. No significant differences among the mean

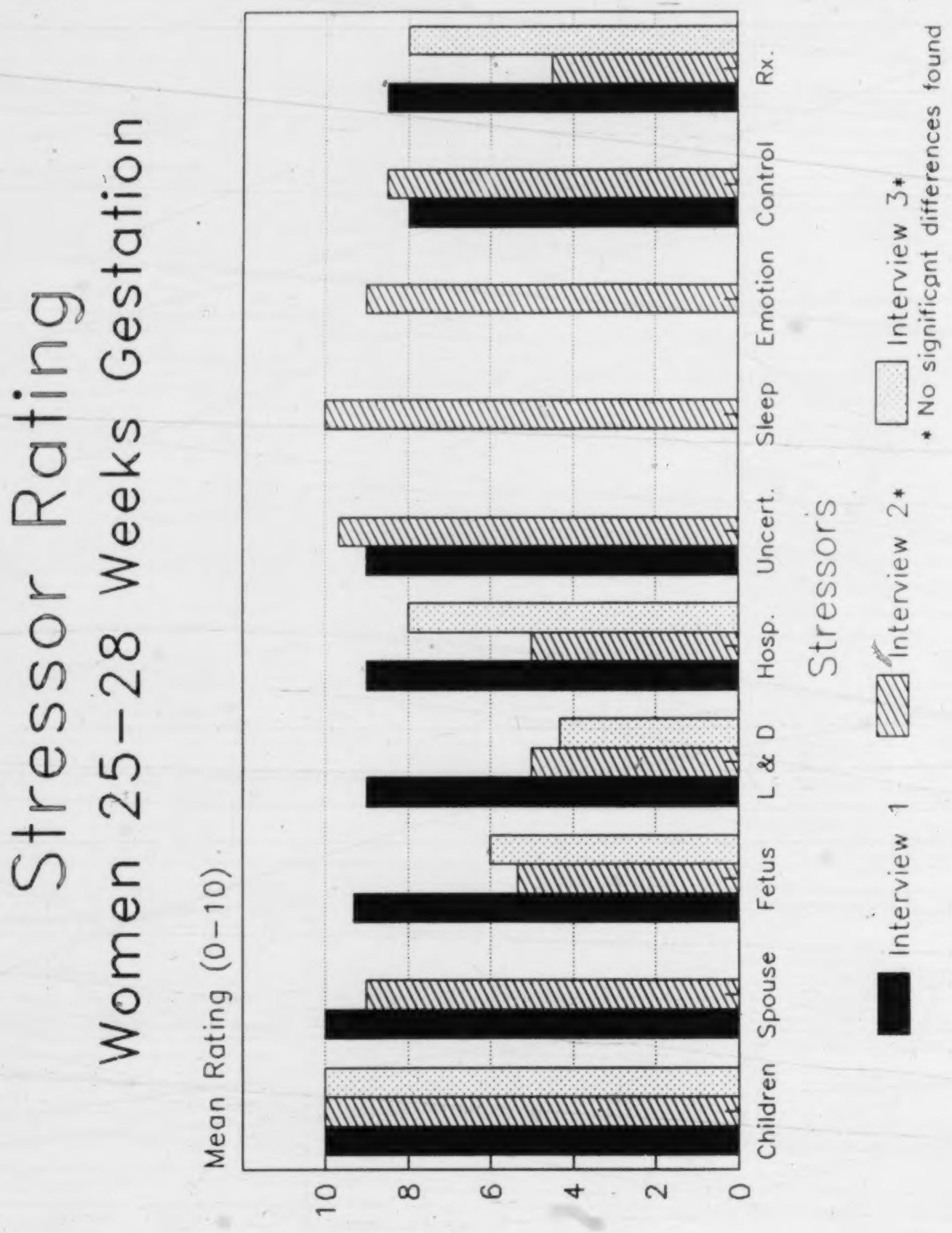


Figure 4.12

Stressor Rating - Women 25 to 28 Weeks Gestation

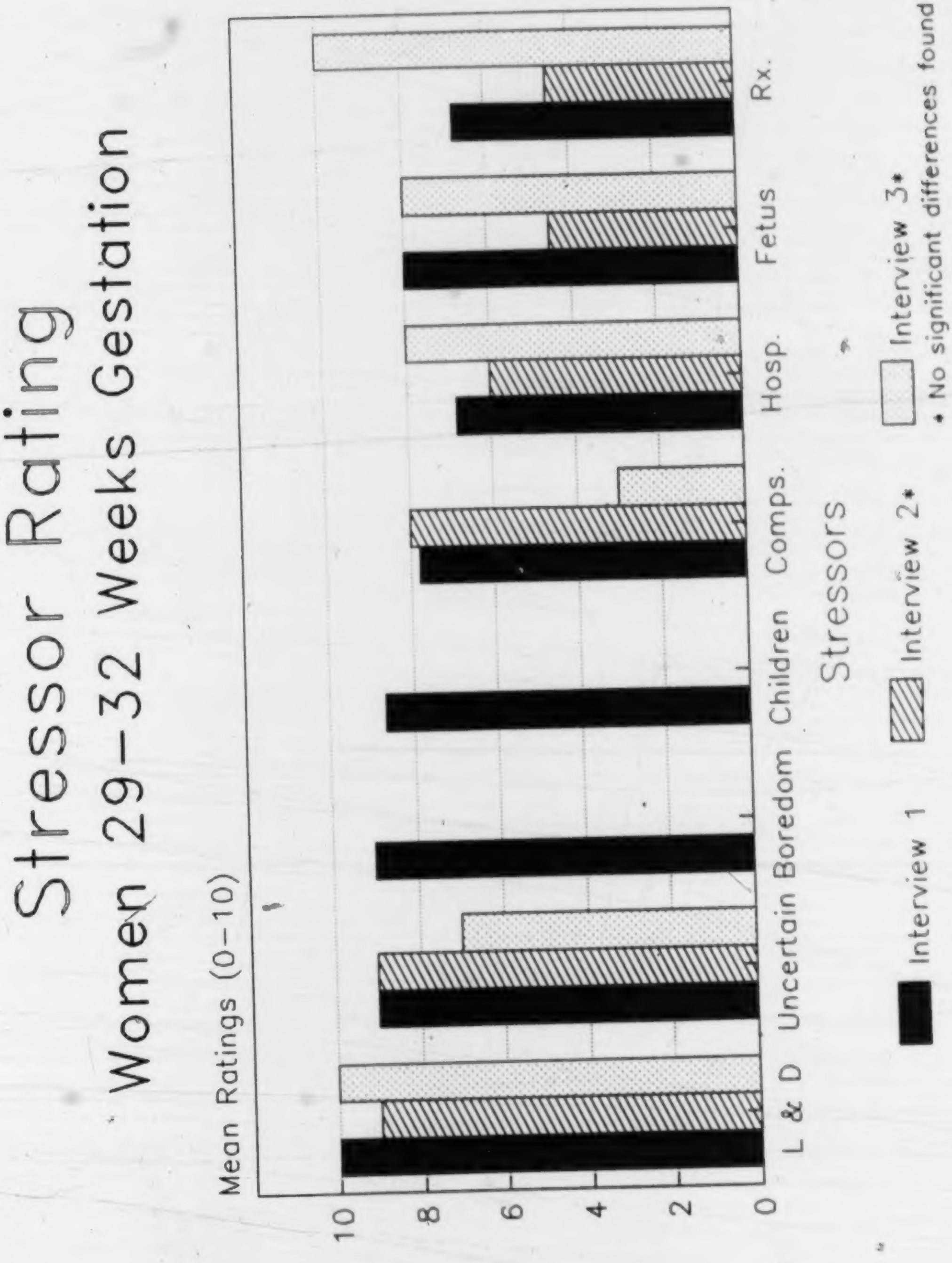


Figure 4.13

Stressor Rating - Women 29 to 32 Weeks Gestation

ratings could be demonstrated for the second and third interview in this group (Table J-7).

Women 33 to 36 Weeks Gestation

Women between 33 and 36 weeks rated body image (*M*=9.0) and hospital rules and routines (*M*=9.0) as most intense at the first interview (Table I-7). Other stressors noted to be rated as very intense were boredom, concerns regarding children, being hospitalized, emotions, uncertainty, concerns regarding the fetus or newborn, and time (Figure 4.14). Although significant differences among mean ratings could not be identified for this group at interview two and three, the trend of high and low intensity rating is similar to the first interview. With the exception of body image at the first interview, the most intense stressors at all three interviews were related to the high risk condition and to the hospitalization experience (Table J-8).

Summary

Differences in mean intensity ratings were demonstrated through analysis of variance techniques. Although some differences in the patterns of ranking of the stressors related to the mean intensities were noted in sub-group analyses, there were some consistencies in stressors which were rated as highly intense. Most of these stressors were related directly or indirectly to the hospitalization experience or to the high risk condition including: uncertainty, concerns regarding children, boredom, and treatments and medications. Exceptions to this pattern were the rating of labour and delivery, body image, and unplanned pregnancy as being highly intense. For

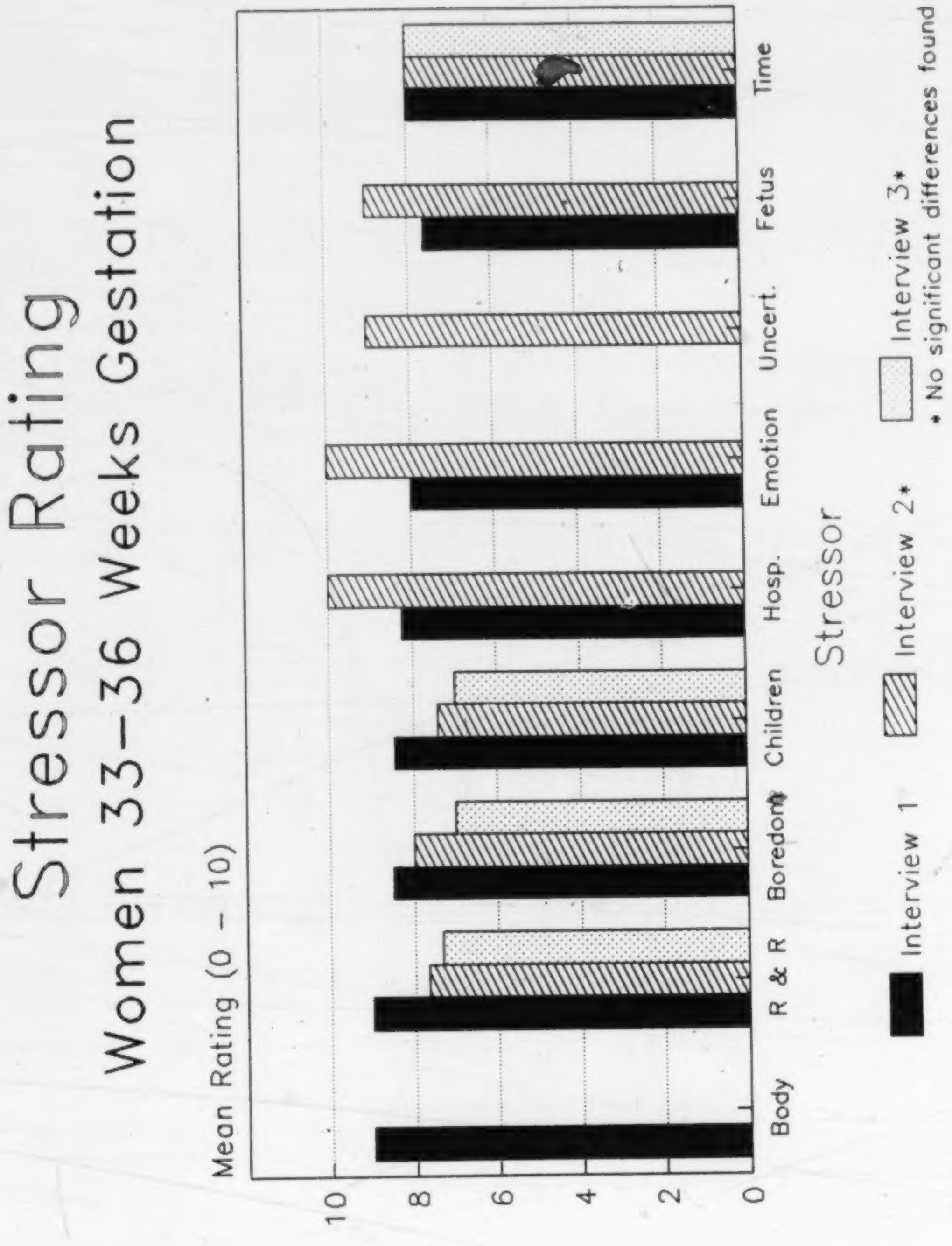


Figure 4.14

Stressor Rating - Women 33 to 36 Weeks Gestation

most categories of stressors, it was not possible to demonstrate a significant change in mean stressor ratings over time. However, for six categories (labour and delivery, having a complication, uncertainty, concern regarding the fetus or newborn, concern regarding job, and hospital rules and routines), a significant decrease in intensity could be demonstrated. The pattern of stressors rated as being most intense differed in some cases to the pattern of stressors noted to be frequently identified. Stressors that were both frequently identified and very intense included hospital rules and routines, treatments and medications, and concerns regarding children. Stressors that were rated as being very intense but were not frequently identified included boredom, uncertainty, and labour and delivery. Stressors that were frequently identified but not rated as being very intense included communication with health professionals, activity restriction, and social isolation.

The Thirty First Subject

The woman not included in the statistical analysis was a 42 year old gravida four, para two, admitted for hypertension at 33 weeks gestation. This pregnancy was unplanned. She was being treated by a psychiatrist for manic-depression, although this was not documented in her chart until the second week after admission. She was interviewed three times and remained in hospital a total of 20 days.

She identified a total of 33 stressors at each of the three interviews. With the exception of four stressors that pertained to events that predated her pregnancy, all her stressors could fit into 16 of the 26 categories used for data analysis. The other four stressors were all related in some way to social relationships: loss of a parent, a disagreement with a sister, an unsuccessful vacation with her daughter, and a friend moving away. These stressors fit into general life event check lists such as that of Holmes and Rahe (1967). She identified five stressors (15%) related to the category of unplanned pregnancy.

Most of the stressors identified by this woman were rated as being highly stressful. With the exception of labour and delivery, all the identified stressors were rated between 7 and 10 with a mean rating of 8.8 for the first and second interviews and 8.6 for the third interview.

Summary

It was possible to organize the identified stressors into 26 categories. Frequencies and mean intensity ratings were calculated for each category for each interview. Analysis techniques were applied to the whole sample, as well as to sub-groups defined by the presence or absence of children at home, whether the woman was working or not working at the time of admission, and the gestation at the time of admission. Where significant differences were demonstrated, the most frequently identified stressors and the most highly rated stressors were reported. Some significant differences in frequency of stressor identification and rating of identified stressors over time were demonstrated. A discussion of the findings follows in Chapter V.

CHAPTER V

Conclusions, Discussion, Implications and Recommendations

Stressor frequencies and intensities were identified through this exploratory-descriptive study. By analyzing sub-groups within the sample, some variations in stressor identification and rating were found. Conclusions based on the findings are listed below. The findings will be discussed in five sections: the sample, the stressors identified, the frequency of stressor identification, the rating of stressor intensity, and the changes in frequency and intensity as the period of hospitalization lengthened.

Conclusions

The Sample

The sample consisted of 31 women, thirty of whom met the inclusion criteria. The mean length of hospitalization was 16.4 days, which differed from the mean length of hospitalization for the study unit of seven days. The most frequent diagnosis requiring hospitalization in the sample was premature labour (40%). Premature labour made up 14% of the women on the study unit who were hospitalized for high risk diagnoses. The sample was representative of the city and province in terms of age and income. Despite the differences in length of stay and diagnosis between the study unit and the sample, the sample was reasonably representative of the target population of women who were hospitalized for an unpredictable length of time for high risk conditions.

What are the Stressors Experienced by the Sample?

Twenty six categories of stressors were identified by the women in the study. These categories could be divided into four main groups: stressors related to pregnancy in general, being diagnosed as having a high risk condition and subsequently being hospitalized, concerns about others, and the hospitalization experience. A total of 266 stressors were identified at first interviews, 154 at second, 83 at third, 48 at fourth, 39 at fifth, 26 at sixth, and 8 at the seventh interview.

Of These Stressors, Which are Most Frequently Identified?

With the exception of the category lifestyle changes, the categories of stressors most frequently identified by the sample were directly and indirectly related to having a high risk condition and the hospitalization experience. Specific categories that were frequently identified included: activity restriction, communication with health professionals, social isolation, concerns regarding children, hospital rules and routines, concerns regarding finances, time, concerns regarding job, and treatments and medications.

Of These Stressors, Which are Rated as being Most Intense?

Three categories of stressors related to pregnancy in general, labour and delivery, body image, and unplanned pregnancy were among those stressors that were rated as being most intense. The balance of the stressors that were rated as most intense were related to having a high risk condition and the hospitalization experience. Specific categories that were rated as being very intense include: uncertainty, boredom, hospital rules and routines, and concerns regarding children.

There are some differences between the patterns of stressors that are frequently identified and the patterns of stressors that are rated as very intense. For example, stressors in the category hospital rules and routines were both frequently identified and rated as being very intense. Boredom was not frequently identified, but was rated as being very intense when it was identified.

What Changes Occur as the Length of Hospitalization Increases?

In general no significant differences were found in the frequency of stressor identification over time. Thus it appears that there is no reduction in the incidence of the primary cognitive appraisal of events as being harmful as the length of hospitalization increases. Two categories of stressors had significant differences in frequency over the hospitalization period. For both these categories, hospital rules and routines and labour and delivery, the general trend was that the frequency of identification increased.

Significant differences in intensity rating were noted for six categories of stressors: labour and delivery, having a complication, uncertainty, concerns regarding the fetus and/or newborn, concerns regarding job, and hospital rules and routines. In all cases, the general trend was that the intensity decreased over time. The lack of significant differences in intensity ratings for all other categories of stressors is suggestive of little change in the appraisal of the degree of harm or threat associated with events as the length of hospitalization increased.

Discussion

The Sample

Mean Length of Stay

The sample group was found to be different, in some aspects, from the study population. One of these differences was the mean length of hospitalization. The mean length of stay for the sample was 16.4 days, whereas, the mean length of stay for the study population was 7 days. This may be accounted for by the inclusion criteria, the research procedure, the nature of some complications and some "gatekeeping" by the nursing staff on the unit.

Women who remained on the unit for only one or two days were unlikely to be included in the sample due to insufficient time for them to receive the letter about the study and set up an appointment for the initial interview. In addition, it is likely that some of the reasons women were hospitalized for short periods would have made it possible to predict the length of hospitalization. For example, women who were hospitalized for diabetes stabilization and education were usually in hospital for a predictable length of time. Therefore, these women would not meet the inclusion criteria of being hospitalized for an unpredictable length of time.

Some women who would have spent only a short time on the unit would have been unstable in their high risk condition and would not have been considered appropriate for inclusion in the study. For example, women who were admitted for antepartum hemorrhage and were actively bleeding or women who were admitted for premature labour and were having contractions were not approached for inclusion in the study. Many of these women would have been delivered relatively soon after their admission.

The women who were identified as suitable by nursing staff for inclusion in the study were likely to be hospitalized for an extended period of time. Women who had some risk of delivering in the next few days, for example, women with premature rupture of membranes, were usually considered inappropriate by nurses for inclusion in the study.

Diagnosis

A second difference between the sample and the hospital population was the frequencies of admitting diagnoses. Forty per cent of the women in the study were admitted for premature labour. Premature labour made up 13 per cent of the diagnoses on the study unit. This difference may, in part, be accounted for by the inclusion of non-high risk diagnoses such as elective cesarian section, full term induction and full term false labour in the unit statistics. When these groups are removed from the analysis, premature labour accounts for 15 per cent of the admitting diagnoses. Some of the admitting diagnoses may not have been suitable for inclusion in the study because of the unstable nature of a complication, such as cardiac disease; because the length of hospitalization was short, such as with abdominal pain or headache; or because the women did not meet the inclusion criteria, such as women admitted prior to 24 weeks.

While the sample was not representative of the total antenatal population, the findings may be applicable to women who are hospitalized for extended periods of time, are between 24 and 36 weeks gestation on admission, and who are in a stable condition.

The Stressors Identified

The categories of stressors identified by the study sample are similar to those identified by low risk or mixed groups (Arizmendi & Affonso, 1987; Glazer, 1980; McGeary, 1987). However, while the overall categories developed for this study were similar to those identified by other investigators, the specific stressors within each category differ. Family, financial and emotional stressors identified by the study sample tended to focus on the high risk condition or hospitalization. For example, all stressors categorized as concerns regarding finances were related to the cost of being in hospital with a high risk condition such as the expense of hiring full time child care and the cost of caring for the child in the future such as the expense of having twins.

In addition to the expected stressors related to pregnancy itself such as body image and physical discomforts of pregnancy, there were specific categories of stressors identified by the study sample that related only to the hospitalization or to the pregnancy complication. It is likely that a hierarchy of needs influences the cognitive appraisal of a stimulus or event. Hospital and complication-related events may appear more likely to be harmful than the usual pregnancy-related events and therefore, labelled as stressors. Since the cognitive appraisal involves the influence of previous life experiences, it is likely that in comparison to the current situation of being hospitalized, some previous life experiences that may have been labelled as stressors such as pregnancy-related events are no longer perceived as harmful.

Stressor Categories

The stressor categories developed through analysis of the stressors identified by the study sample are similar to stressors identified in other studies of high risk antepartum hospitalized women. The 26 stressor categories covered the range of stressors identified in studies that used fixed item questionnaires (Waldron & Asayama, 1985; White & Ritchie, 1984) and that used qualitative methods (Loos & Julius, 1989; Snyder, 1985). Therefore, with the exception of unusual circumstances, it seems likely that the categories do encompass the variety of stressors that women may experience when hospitalized during the antenatal period for high risk pregnancy.

One stressor category that was unusual to this group was unplanned pregnancy. There were four women in the sample (13%) who reported not planning or wanting to be pregnant. This proportion of unplanned pregnancy may not be unusual. Cartwright (1988) reported that among a random sample of women having a live birth in 1984 in England, approximately one quarter indicated that their pregnancy was unintended. Of these women, more than half remained unhappy about being pregnant throughout the entire pregnancy. Cartwright (1988) found average birthweight of infants resulting from unintended pregnancies was lower than from intended pregnancies. This may suggest that women who do have unplanned or unwanted pregnancies are at greater risk of developing high risk conditions resulting in early or premature delivery and fetal growth insufficiency. It may also be possible that the proportion of women in the sample who had unplanned or unwanted pregnancies is not unusual among a population of high risk women.

Frequency of Stressor Identification

The stressors most frequently identified by the sample group were related directly and indirectly to the hospitalization experience and to having a pregnancy complication. The only frequently identified stressor related to pregnancy in general was lifestyle changes. As discussed above, it appears likely that general pregnancy stressors are replaced by the more immediate stressors related to hospitalization and the high risk condition. However, it is of interest that in other investigations of women in the third trimester, lifestyle changes was the fifth (Arizmendi & Affonso, 1987) and the seventh (McGeary, 1987) most frequently identified stressor. Although the stressors more frequently identified in those studies such as labour and delivery, body image and parenting concerns were identified by the study sample, it is likely that the cognitive appraisal of these potential stressors resulted in a reallocation to a non-harmful status for many women, thus reducing the relative ranking in frequency of identification. The research method may have also influenced the frequency of general pregnancy stressor identification. Since women were expected to generate their list of stressors, it may have been difficult for them to move their focus from the hospitalization and complication to the other pregnancy stressors without a great deal of prompting. Some probing questions were used in the interview for women who expressed difficulty in identifying stressors, however, these were generally kept to a minimum.

Activity Restriction

It is not surprising that the category of activity restriction was frequently identified. Most women led an active lifestyle prior to their hospitalization. It is not unusual for women to practice good health behaviour, including exercise, during their pregnancy (Lewallen, 1989). Most women in the sample had some form of activity restriction ordered. Many women reported that they were glad of the opportunity to rest while they were in hospital, even when they identified stressors in this category. Women in other investigations also identified rest as one of the good things about hospitalization (Heaman, 1988; Taylor, 1985) It is unusual, however, for women of childbearing age to experience such restrictions on their activity. Rest and bedrest may be different concepts to these women. Rest may imply an aspect of choice and following body cues as to when it is desired. Bedrest is imposed. Therefore, the event of bedrest is appraised as harmful because it may conflict with existing values about lifestyle, it is uncomfortable and the element of choice is eliminated. None of the other antenatal hospitalization studies reviewed reported activity restriction as a frequently identified stressor. It is possible that the incidence of bedrest was higher in the sample than in other groups because of the high proportion of premature labour and a tendency of the physicians in the study unit to use bedrest as a treatment of choice. Since there is some controversy in the value of long-term bedrest (Bennett & Botti, 1989), the incidence of bedrest may differ in samples even where the proportion of complications is similar to the study sample.

Communication with Health Professionals

Communication with health professionals was another frequently identified stressor. This finding is consistent with results of other investigations of antenatal hospitalization (Heaman, 1988; Taylor, 1985). Communication stressors included having to talk with new doctors, not getting enough time to talk with the doctor, having too many different nurses, and getting inconsistent or incomplete information. Information gathering is an important part of the cognitive appraisal phase of stressor evaluation. Therefore, both the act and the content of communication may influence stressor identification (Figure 5.1). If information being sought about another potential stressor, for example, how long one may be in hospital, is vague (content) and perceived as difficult to obtain (act), then both the content area and the action of having to communicate may be identified as stressors. Therefore, this particular category may be tied to all other hospitalization stressor categories.

The change in role, from an adult in a variety of capacities related to family and work to a patient, may also influence the ability to communicate and therefore the frequency of communication stressor identification. Some nurses on the unit informed the investigator that they believed the women were adults and thus able to ask questions or express their concerns without additional support

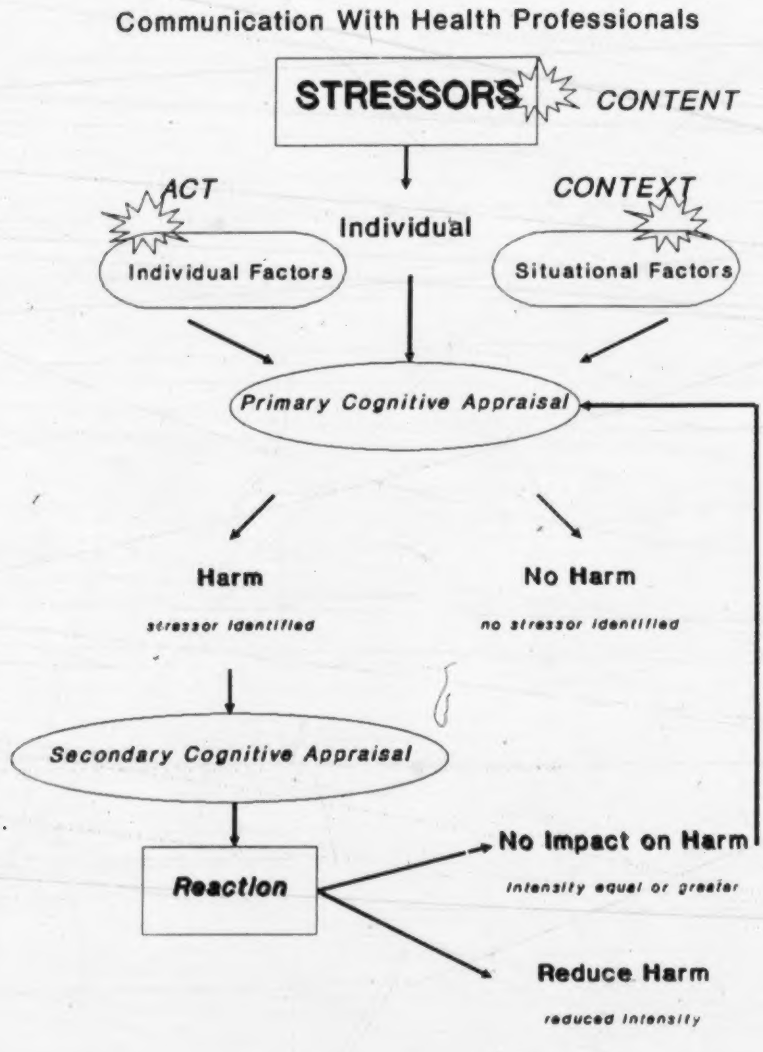

Communication With Health Professionals
STRESSORS
CONTENT
ACT
CONTEXT
Individual
Individual Factors
Situational Factors
Primary Cognitive Appraisal
Harm
stressor identified
No Harm
no stressor identified
Secondary Cognitive Appraisal
Reaction
No Impact on Harm
intensity equal or greater
Reduce Harm
reduced intensity

Figure 5.1

Stressor Frequency Related to Communication with Health Professionals or assistance. However, in the patient or sick role, the individual becomes powerless (Schutz, 1971). Communication becomes more similar to parent-child patterns rather than adult-adult patterns (Berne, 1964). The extent to which the women in the study sample adopted the patient role may have been reflected in the high proportion (n=26) who wore hospital gowns even when their physical status would not make it necessary to wear such attire. Although many people feel discomfort questioning a physician, even out of hospital, several of the women in the sample were professionals and accustomed to communicating at a peer level with professionals in many fields. Even these women identified communication stressors. One woman who is a lawyer said that not only did she feel uncomfortable communicating with the doctors and nurses, but she was even hesitant to ask anything of the housekeeping staff. She felt that everyone had more power than she did and was unsure of the consequences of asking for the wrong things. This observation may be similar to the findings of Field (1987) whose subjects were afraid that their babies might suffer the consequences of any negative communications with nurses.

Since many of the interviews were conducted in the morning, the investigator had the opportunity to observe communications between the women and their physicians and nurses. Contact time tended to be quite short. The primary physician rarely came to the woman's bedside alone. An entourage of students, residents, nurses and other allied health professionals were often in attendance. The patterns of communication were generally within the entourage and about the woman rather than including the woman. Sometimes, inappropriate questions were asked of the women. For example "how are the water works?" was a frequent salutation even for women who had no reason to be asked such a question. Sometimes, the focus of the communication tended to be on the fetal monitor rather than the woman. Despite this observation, none of the women mentioned that nurses and doctors seemed more interested in the monitor than in them. However, it may be that the women were sufficiently concerned about their fetus that the monitor became an extension of their self and that interest in the monitor was equated with interest in them. It has been suggested that women are less influenced by technological interventions such as fetal monitors than by communication and supportive care (Killien & Shy, 1989).

It is of interest that even though communication with health professionals was frequently identified as a stressor, women consistently rated high confidence in health professionals in the biographical questionnaires at each interview. It is possible that women do not perceive communication skills as part of the requirement to be a competent practitioner. They may perceive that some stressors related to communication are an internal problem, not a problem with the health professionals. Field (1987) found that some subjects reported that nurses were efficient while preparing for an imminent delivery, but did not communicate with the woman. The subjects excused this lack of communication as an unreasonable expectation on their part, because the preparation for delivery was a greater priority.

Another factor which may have influenced the frequency of communication stressor identification was that much of the treatment and diagnosis in perinatal care is based on theoretical and statistical information, rather that precise etiologies and individual assessments (Holbrook, Laros, Creasy, 1989; Shadish & Reis, 1984; Wall, Sinclair, Nelson, Toffler, 1989). It is not always possible to give definite information about such things as course of treatment or length of hospitalization for some complications. However, there is likely an element of protection of the patient in this situation. Physicians and nurses may feel that women do not need or want to know the possible outcomes when there is a wide margin of error in information and therefore, give vague information about such things as ultrasound reports and length of hospitalization. One woman, frustrated by vague information about her twins, resorted to reading her chart while waiting for an ultrasound. Although it is likely that the degree of tolerance for margin of error is variable among individuals, it is possible that many women would prefer to know about that margin of error rather than receiving a vague response.

Social Isolation

Social isolation stressors were also frequently identified by the sample. Like communication, social isolation may have a dual role in stressor identification. Women would incorporate perceptions of how other people may fit into an event during cognitive appraisal of the event as harmful or not harmful. Therefore, separation from one's usual social network may influence redefinition of some previously non-harmful events to harmful. The separation itself also becomes an event that is identified as harmful because of loss of or reduced access to the helpful aspects of the social network. Social isolation as a frequently identified stressor is supported by results from previous studies (Waldron & Asayama, 1985; White, 1981). Loneliness or an awareness of feelings of being apart from others has been identified as a source of stress for hospitalized patients and a potentially pathological condition (Copel, 1988; Thomas, 1986).

Although 63% of the sample came from out of town, the issue of social isolation is likely more complex than merely the distance the individual lives from the hospital. Not all women from out of town identified social isolation stressors and some women who lived in town did so. No specific analyses were done using distance from town as a sub-group identifier. The various combinations of factors including actual distance, whether the partner was able to relocate, whether there were children at home and whether there were other support people living in the city made subgroups too small to obtain any significance in analysis.

Reduced visiting was affected by the lifestyle of the visitors. Women seldom had visitors during the day. Some women stated that their husband could not visit as often as they would like because he had to care for the children at home. They may have been able to arrange for child support during the day, but child care became the husband's responsibility in the evening.

Several (63%) of the women were in private rooms for all or part of their hospitalization. The combination of bedrest and private room is likely a factor influencing the frequency of social isolation stressor identification. Stewart (1986) suggested that perceptual (ex. nightmares and poor estimation of time) and behavioural (ex. poor compliance) consequences may occur when patients are immobilized and socially isolated in a private room. Women in the sample described being restricted to their room alone as being lonely, like prison and isolated within four walls. Women in this sample also reported evidence of non-compliance such as visiting other women and extending the time spent in the bathroom when they knew that they were on bedrest.

Concerns Regarding Children

The category concerns about children at home was also frequently identified by the sample. For women with children at home, this category made up 14% of the stressors identified at the first interview. Although concerns regarding children were identified in many previous studies of this population, it did not usually rate highly in frequency. This may be because no separate analysis was done among women with children at home (ex. Heaman, 1988; Merkatz, 1976; White, 1981). Waldron and Asayama (1985) found separation from home and spouse as being the most frequently identified stressor. Affonso (1988) found concerns about other children to rank in the middle of the frequency range of stressors identified by a group of multiparous low risk women. Therefore, pregnant women would already have some concerns considered to be stressful about their children. Although some events related to their children may not be appraised as potentially harmful when women are at home, their inability to deal directly with these events while in hospital may influence a redefinition of the events to harmful. Many women expressed concerns about finding adequate childcare, particularly early in their hospitalization. Women also missed their children. They may have felt a conflict between their role as a patient and their role as a parent. As a patient it was difficult or impossible for many women to assume actively their role as a parent. Role insufficiency occurs when there is difficulty in performance of a role (Meleis, 1975). It is of interest that not every woman with children at home identified stressors in this category.

Although 47% of the women who were working at the time of admission had children at home, the category of concerns regarding children was not frequently identified among this group. It is possible that the concerns were reduced because these women would have already had some form of child support arranged because of their employment, and therefore, the hospitalization did not cause any major changes in child care arrangements. These women may also have been accustomed to being separated from their children for prolonged periods, and therefore, not now identify separation from the children as a harmful event.

Hospital Rules and Routines

Women frequently identified hospital rules and routines as a stressor. This category included such things as admission procedures, not being allowed to use one's own radio, eating hospital food, the noise of the telelift and being moved. This category is an example of stressors where women may feel helpless or powerless to react in a way that will have an impact on the perceived harm of the stressor. It is possible that the identified stressors reflect the frustration of that helplessness rather than an actual perception of harm. Heaman (1988) ranked the hospital environment as a frequently identified stressor.

Concerns Regarding Finances

Concerns about finances are often not considered in assessment of women in hospital because of the socialized health care system. Financial concerns came from two main sources. The primary source of concern was the loss of the woman's wages. This loss was both short term, with the concern of the immediate loss of wages during hospitalization and long term, with the impact of the hospitalization on maternity leave benefits. For several women, the pregnancy was planned with specific financial goals based on their earning power. The second source of concern was the loss of the partner's wages. This was particularly relevant for women who were transferred from out of town and/or who had children at home. The financial cost of the partner taking time off work to stay in the city with the woman and/or to care for the children had to be balanced with the emotional cost of separation and/or the financial cost of childcare services. Arizmendi and Affonso (1987) reported financial concerns as a moderately identified stressor in a mixed sample of pregnant women. The category financial concerns was only reported as a stressor by Waldron and Asayama (1985) in a review of other studies of hospitalized antepartum women.

Time

Stressors related to time were also frequently identified by the sample group. Specific examples included the prospect of a long hospitalization and waiting for "it" to be over. In terms of stressor identification, this category is another example of how the women may feel powerless to react to the stressor in a way that reduces the perceived harm of the stressor. Waldron and Asayama (1985) reported time related stressors, particularly in women who were hospitalized for an extended period of time.

Concerns Regarding Job

Concerns regarding the woman's job were frequently identified in some sub-groups (women with children at home, women working when admitted, and women 29-32 weeks gestation). In particular, this category was the most frequently identified stressor by women who were working at the time of admission at their first interview. It is likely that some women in the 33-36 week group would have already begun maternity leave when they were admitted and have therefore, resolved concerns identified by women such as leaving work projects undone and delegating projects to colleagues. This category might have been expected to be frequently identified by women in the 25-28 week group, since they would be least likely to have been prepared for a sudden departure from their job, however, only one woman in this gestational group was working outside the home at the time of admission.

Killien (1987) found no difference in career commitment between women seeking parenthood and women avoiding parenthood. Therefore, for some women, the commitment to their career or job may continue to be strong during the pregnancy. For some hospitalized women, concerns regarding their job may parallel concerns regarding children. Similarities include responsibilities, change in role definition and lack of ability to respond actively to work related concerns. Job related concerns were reported by Arizmendi and Affonso (1987), but they did not rank highly in frequency of identification. This category was not reported as a frequent stressor in other studies of antenatal hospitalization.

Treatments and Medications

Another frequently identified stressor category in some sub-groups (women without children, women working when admitted, women 25-28 weeks gestation, and women 29-32 weeks gestation) was treatments and medications. Specific examples included such things as taking medications, having an intravenous, and receiving blood transfusions. This category of events may have an influence in stressor identification in three ways (Figure 5.2). The actual effects of the medications and treatments may be perceived as harmful because of unpleasant side effects and pain. The secondary cognitive appraisal of these stressors may be influenced by a lack of power or control to respond actively to the stressor. The lack of clear, concise information about some treatments may make primary cognitive appraisal of an event difficult and therefore, a harmful label may be applied.

Treatments and medications may also reinforce the change of role for the women to that of patient. Taking medications and being given

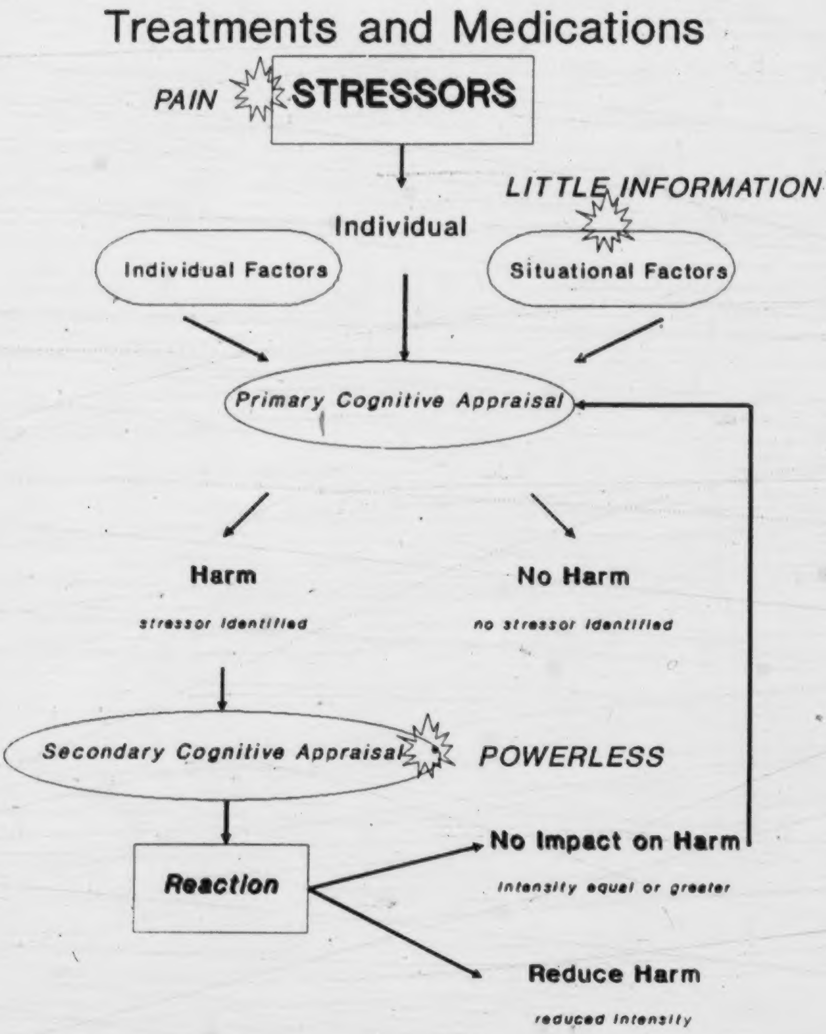

Treatments and Medications
PAIN
STRESSORS
LITTLE INFORMATION
Individual
Individual Factors
Situational Factors
Primary Cognitive Appraisal
Harm
stressor identified
No Harm
no stressor identified
Secondary Cognitive Appraisal
POWERLESS
Reaction
No Impact on Harm
intensity equal or greater
Reduce Harm
reduced intensity

Figure 5.2

Stressor Frequency Related to Treatments and Medications treatments is a socially acceptable way of legitimizing illness (Telles & Pollack, 1981). However, women who do not feel ill may experience conflict in adopting the patient or sick role. Additional conflict may be experienced by women whose health behaviours during pregnancy precluded taking medications of any kind. The category treatments and medications was reported as a frequent stressor by Waldron and Asayama (1985) and White and Ritchie (1984). This category of stressors is likely closely related to other categories such as communication, uncertainty and concerns regarding the fetus or newborn.

Concerns Regarding the Fetus and/or Newborn

It was surprising that concerns regarding the fetus or newborn were not frequently identified except as the fifth most frequent in the sub-group of women without children. Some women reported feeling safe in the hospital which is consistent with the findings of Heaman (1988) and Taylor (1985). This feeling of safeness may have extended to the status of the fetus or newborn. Some women had prior experience with complicated pregnancy with good outcome for the infant and therefore may not perceive the complication as a harmful event for the fetus or newborn. One woman suggested that it was "too scary" to talk or think about the fetus or newborn coming to harm and so she could not consider it a stressor because she had not thought about it. Other women who had no exposure to premature or high risk infants may not have a realistic impression of such an infant, particularly early in their hospitalization since they may not have had an opportunity to visit the NICU because of bedrest.

Summary

In summary, analysis of the frequency of stressor identification revealed that some stressor categories were not only frequently identified by the whole sample group, but they were frequently identified by sub-groups defined by variables such as gestation. More specifically, the stressors most frequently identified were related to the hospitalization experience. For women with children at home, the stressors related to this experience included separation from their children. However, specific examples of stressors identified for each category were often unique to the individual. Aspects of lifestyle, family, and reproductive history may influence what women find to be stressors. The analysis of the ratings of intensity for the identified stressors will be discussed in the following section.

Rating of Stressors

The stressors identified were rated on a visual analogue scale of 1-10. It is of interest that in this study, the mean ratings ranged from 2 to 10 (overall *M*=5.7). In a similar study conducted with women in the third trimester using a scale of 1-100, the range of mean ratings was from 47.88 to 67.40 (Arizmendi & Affonso, 1987). Although a difference in rating scales may account for this difference in range, it is also possible that the high risk hospitalization causes greater polarization in rating of stressors.

There are some differences between the pattern of stressors that were most frequently identified and the pattern of stressors that were rated as most intense. In other words, there were some categories of stressors that were common among many women in the sample group and, in some cases, there were different categories of stressors that, if identified were rated as highly intense. The categories that were not frequent, but intense were: uncertainty, labour and delivery, hospitalization, boredom, sleep disruption, unplanned pregnancy, emotions, body image and concerns about the spouse.

Categories Related to Pregnancy

In this analysis, three of the categories that were rated as being very intense were related to pregnancy in general: labour and delivery, body image and unplanned pregnancy. In a previous study, a sample of low risk third trimester women rated labour and delivery as the second most intense and body image as the seventh most intense (Arizmendi & Affonso, 1987). Perhaps, some stressors that are intense during a "normal" pregnancy continue to be intense, or perhaps become more intense because of the high risk or the hospitalization experience.

Labour and Delivery

Labour and delivery may become an intense stressor in the third trimester because of the unknown element for primigravidas and the expectations of the multigravidas. In the high risk situation, new dimensions to labour and delivery such as having a cesarian section may increase the degree of perceived harm and therefore, the intensity of the stressor. The high risk situation may accelerate the focus on labour and delivery. The prospect of an imminent delivery may "force" the woman to evaluate concerns and fears that she would have otherwise postponed to a later time.

Categories Related to the High Risk Condition and Hospitalization

The other high intensity stressor categories that were identified related to the high risk and the hospitalization experience. A high degree of harm may be assessed when appraising cognitively events related to the complication. The life of both the mother and infant may be perceived to be in danger. Therefore, events such as having to go to the hospital, having to be transferred to the tertiary care centre, and having to take medication may be seen as potentially very harmful to mother and fetus/newborn. Concerns about the pregnancy complication or health status in pregnancy were found to be rated highly stressful (Ford, 1987) and moderately stressful (White & Ritchie, 1984) in other studies of antenatal hospitalization.

Intensity Rating and Uncertainty

Uncertainty may influence stressor rating directly and indirectly (Figure 5.3). In the appraisal process, an event with a high degree of uncertainty, such as when the delivery will occur, may be difficult to evaluate. The woman may have to assign a high rating to an uncertain event because she must base her evaluation on the "worst-case scenario". Indirectly, the uncertain events become part of the situational factors used in the evaluation of other events. Because the woman is unsure when she may deliver and go home, decisions of how she evaluates stressors related to her children at home, for example, may be influenced by that uncertainty.

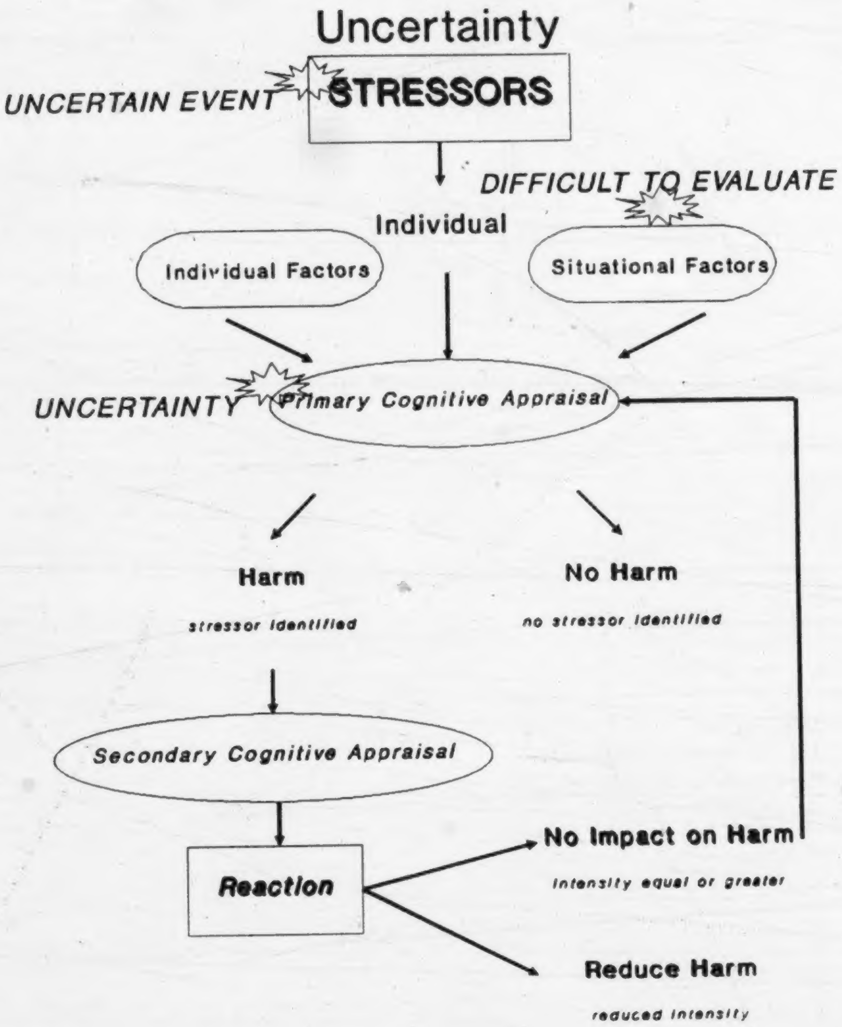

Uncertainty
UNCERTAIN EVENT
STRESSORS
DIFFICULT TO EVALUATE
Individual
Individual Factors
Situational Factors
UNCERTAINTY
Primary Cognitive Appraisal
Harm
stressor identified
No Harm
no stressor identified
Secondary Cognitive Appraisal
Reaction
No Impact on Harm
intensity equal or greater
Reduce Harm
reduced intensity

Figure 5.3

Stressor Intensity Related to Uncertainty

Intensity Rating and Control

High stressor rating related to the hospitalization experience may be influenced by the amount of control which the woman feels she has over those events. If the woman perceives that her reaction to the event has been successful in reducing harm, then the rating of that event will not be as high as if she perceives that her reactions have no impact on the event. For example, even though activity restriction was frequently identified as a stressor, it was not highly rated. Part of this difference may have been that many women also found rest to be a positive aspect of hospitalization. Therefore, the activity restriction had some non-harmful properties. Early in hospitalization, women may perceive that without activity restriction, the potential harm to their own health and the health of the fetus would be greater than the harm of the activity restriction. The other part of the difference in frequency and intensity rating may have been that women found ways to manage the activity restriction such as increasing their level of activity independent of medical advice. If a woman tried to get up a little more than usual and did not go into labour or did not bleed, then she may evaluate that increase in activity as reducing the harm of the bedrest without increasing the harm of the high risk condition.

For other categories of stressors, however, it may not be as easy to reduce harm through reaction to the event. The woman may not perceive any reduction in the degree of harm in her separation from her family regardless of her reaction.

Boredom

Boredom was reported as the highest rated stressor in two previous studies of antepartum hospitalization (Heaman, 1988; Taylor, 1985). Loos and Julius (1989) reported boredom as being a predominant problem of the subjects in their research. Again, this stressor may be related to the degree of control which the woman perceives she has over reducing the harm. If activities that the woman would normally pursue in order to reduce boredom are impossible because of complication-imposed restrictions, then the level of harm and therefore, the rating of intensity will be high. The study unit had a craft programme available for the women. Although many women reported enjoying the crafts, others said either that the crafts were not enough to keep them from being bored or that they did not enjoy doing crafts. One woman said that "they think that they can keep us happy with some crafts". Another stated that she should get an academy award for putting on a performance of doing crafts and being a model patient when she hated it.

Summary

In summary, there are some differences between the stressor categories that are most frequently identified and those that are rated as most intense. Individual and situational factors may influence the primary and secondary appraisal of events when women are hospitalized. Some events that are appraised by women as being stressful such as activity restriction, may be appraised as having a low level of harm because of individual and situational factors. Some events that are less often appraised as being harmful, or that are less often experienced such as boredom are rated as very intense when they are appraised as harmful. Other events such as hospital rules and routines are both frequently appraised as being harmful and are given a high level of harm. It is likely that identification and rating of some stressors will influence the rating and identification in other categories.

Changes with Time

Some changes in both frequency of stressor identification and the mean intensity ratings were evident as the length of hospitalization increased. Some of these changes may be attributed to the changing sample size. As the sample size decreased, the data from individuals were more likely to influence the analysis. Statistical significance for changes in frequency over time was obtained only for the categories hospital rules and routines and labour and delivery. This finding may be of importance in that it may be implied that no change in frequency of stressors indicates that the situation does not become better. In other words, women do not become accustomed to being in hospital. This was not a function of the study method, since women did eliminate stressors from their list by rating them as no longer a stressor (intensity = 0) at subsequent interviews. Women also added new stressors to their lists at subsequent interviews that were not present at earlier interviews. Significant changes in frequency as well as trends observed in frequency changes will be discussed.

Changes in Frequency

Lifestyle Changes

Some stressor categories changed very little in frequency over time. For example, lifestyle changes were consistently identified by the whole sample for three interviews. Perhaps, the hospitalization marked an end to the changes in lifestyle. No new events occurred that would require further changes and therefore, no new lifestyle change stressors were added.

Hospital Rules and Routines

Other stressor categories increased in frequency over time. A notable example was hospital rules and routines. For the whole sample, this category increased from 6% at the first interview to 16% at the third interview. This suggests that the women in this study did not get used to being in hospital as was suggested by Wilson-Barnett and Carrigy (1978) based on their findings on hospitalization of medical and surgical patients. This finding is supported by other research of antenatal hospitalization (Ford, 1987; Merkatz, 1976; White, 1981). Tolerance for rules and routines may decrease as the length of hospitalization increases. An inability to effect change in rules and routines and a reduction in the novel aspects of hospitalization such as being able to select food from a menu may influence a proportionate increase in identification of this category in comparison to other categories.

Labour and Delivery

The frequency of the category labour and delivery also increased over time. It is possible that this increase was influenced by the interaction of two factors. The longer that women were in hospital, the more imminent their delivery would be and therefore, the more likely that this event would be of concern to them. Concern regarding labour and delivery has also been identified as a normal aspect of the latter part of pregnancy (Rubin, 1967a). Therefore, it is possible that "normal" developmental tasks of pregnancy that change as the pregnancy advances will influence the identification of labour and delivery as a stressor as women advance in their gestation.

Communication with Health Professionals

Another category that increased somewhat in frequency, however, not significantly, was communication with health professionals. Although some of the specific stressors identified in this category would have been reduced or eliminated over time, such as talking to a new doctor, others may not have resolved. For example, because the schedule for nurses on the study unit required the nurses to rotate between two units, the women were exposed to a large number of nurses. Only women who were hospitalized a very short time would have continuity of nursing care.

Concerns Regarding Children

Other stressor categories decreased in frequency over time. An example of this was concerns about children. It is likely that women who were able to resolve the events that they identified as being stressful, for example, getting adequate childcare, no longer identified these events as being stressful in subsequent interviews.

Women may have found other ways of maintaining their role as parent, such as having a child stay over night that may influence the identification of child-related stressors. It may have been possible that women perceived that the family was managing well without her as hospitalization lengthened and therefore were less likely to identify concerns related to children. Throughout hospitalization, other events such as labour and delivery may have become relatively more harmful in her appraisal and therefore, the identification of child-related stressors decreased.

Activity Restriction

Another category that decreased somewhat in frequency of identification throughout hospitalization was activity restriction. Although the proportion of bedrest orders did not change over time, some women found ways to reduce the amount of time they spent in bed, for example spending longer periods of time in the bathroom than necessary. Some women were able to negotiate an increase in activity with their physicians.

Social Isolation

Social isolation also decreased in frequency of identification over time. This may have been because women found some replacement for their social contact needs through contact with other women on the unit and the health care professionals.

Change in Intensity

The rating of the intensity of some categories of stressors changed over time. Significant differences in intensity from one interview to the next were found in six stressor categories: labour and delivery, having a complication, uncertainty, concerns regarding the fetus and/or newborn, concerns regarding job, and hospital rules and routines. The general trend in all these categories was that the intensity decreased as the length of hospitalization increased. An examination of "grand means" was also suggestive of a pattern of a decrease in overall stressor intensity as the hospitalization increased. However, the lack of significant differences among mean intensity ratings from one interview to the next when analysis of variance was performed for each stressor category may suggest that there is no change in perceived intensity and therefore, no reduction in stressor intensity for most categories as hospitalization increases. In other words, women do not become accustomed to being hospitalized. There may be specific stressors for which they can find ways to reduce or eliminate the assessed degree of harm. However, overall, the perceived level of intensity may not change over time.

Changes in Intensity Coinciding with Changes in Frequency

For some changes in mean ratings, the differences may be attributed to the same factors as the differences in the frequency of identification. For example, one category that decreased in intensity and frequency as the hospitalization lengthened was concerns about children. The same factors, such as the ability to arrange adequate childcare or the ability to tolerate the separation which would influence the likelihood of identifying this as a stressor, would likely influence the perceived degree of harm or intensity rating.

Increased Intensity over Time

The process of secondary cognitive appraisal may have influenced the rating of stressors where the mean intensity rating was higher on the second or third interview than on the first interview. With these stressors, for example sleep disruption and uncertainty, the primary cognitive appraisal may have resulted in a perception of low or moderate harm. However, the reaction formed to deal with these stressors which may have been adequate in the short term was not sufficient to reduce or eliminate the harm over a long period of time. Therefore, the secondary cognitive appraisal would result in an altered perception of the level of harm, thus a higher rating of intensity at subsequent interviews.

Implications for Nursing Practice

Some of the findings from this study have direct implications for nursing practice. Analysis of the data revealed that many of the events women most often identify as being stressors and/or rate as very intense tend to be directly related to the hospital environment such as communication with health professionals, hospital rules and routines, activity restriction, social isolation and treatments and medications. Many of these events are subject to nursing intervention or changes in unit policy. Changes in unit policy are most suitable when they apply to stressor categories which were most frequently identified and therefore, effect many women. Individualized assessments and interventions are most appropriate for categories of stressors which are less often identified, but are rated as very intense when they are identified.

Programmes

Although there were some programmes in effect for the women on this unit at the time of data collection, there is need for further programme development that may reduce some of the harmful aspects of such events as activity restriction and social isolation. Some women in the sample suggested that additional opportunities for social interaction would be beneficial. Some women did not join in the craft programme because of a lack of interest in crafts and therefore missed out on the opportunity for interaction. Lunches, support groups and formal or informal education programmes such as those reported by Dore and Davies (1979) could provide additional opportunities for socialization. Evening activities might be appropriate for women from out of town who do not get visitors.

Communication

Communication concerns are definitely within the realm of nursing. Even concerns related to other professionals have direct implications for nursing practice. Nurses ought to take a role as advocate when the women have difficulty in communication with physicians. The role as advocate may take several forms. These could include assisting women with identifying questions and concerns that they wish to address to the physician and to develop approaches that would be most likely to get responses that would meet the needs of the women. The nurse responsible for the woman's care could be present when the physician makes rounds in order to encourage communication between the physician and the woman. The nurse might also discuss communication concerns with the physician involved.

Some of the communication concerns noted through the data analysis included reluctance to answer questions, giving partial answers, giving conflicting information, giving information to the women that is different or conflicting with information in the chart, and appearing not to have time for the women.

Some improvement in communication may be achieved through better nursing assessment of the concerns of the individual. The research method was easily carried out and could be modified as a method of assessment.

Unit Organization

This unit began a primary nursing project around the same time as data collection commenced, however, there were difficulties in implementation. Primary nursing may be beneficial with this population in reduction of frequency and intensity of stressors. The establishment of a trusting relationship with one or more nurses may enable women to use the nurse as part of the social support network that may function as a situational factor in event and stressor evaluation. Primary nursing could ensure more consistency in information and caregiving.

Changes in the unit rotation may help improve continuity of care and therefore, enhance nurse-client relationships. Nurses who move back and forth frequently between the labour and delivery suite and antepartum unit may find it difficult to change their style of care from one unit to the other. These nurses wore the scrub uniforms from labour and delivery when they worked on antepartum. Perhaps a different uniform, or even not wearing uniform would be beneficial in helping the nurses differentiate between their two roles.

Restoring Control

Many of the stressors may have been a reflection of broader problems such as loss of control or powerlessness, change in self concept and change in role. By giving women as complete information as possible about their situation and encouraging them to be part of the decision making process about their care, the broader problems may be reduced, thus reducing the intensity and frequency of specific stressors. Women could be encouraged to participate in more self care activities. For example, since home uterine activity monitoring has been used successfully (Gill & Katz, 1986; Iams, Johnson, O'Shaughnessy, West, 1987; Koel & Wheeler, 1989; Morrison, Martin, Martin, Hess, Gookin, Wiser, 1988), it would not be impossible for women to be more independent in activities such as non-stress testing (NST). They would not be expected to interpret the monitor strip, but could decide when they wanted the NST done, for example, when they recognize that the fetus is active and could apply the monitor themselves. The incorporation of the education programmes used in premature labour prevention programmes (Johnson, 1989; Koehl & Wheeler, 1989) in education given to women at risk of premature labour, may enhance perceptions of control over the risk condition for some women.

Role Conflict

Nurses may be able to assist women in dealing with conflicts in their roles. In particular, women who have been working outside the home during their pregnancy and have had to leave their jobs unexpectedly may need support in this transition. Although rest is often a treatment of choice for many at risk conditions, it is possible that the anxiety caused by stressors related to a job may counteract the benefits of rest. If the woman was given adequate resources to resolve the concerns related to leaving her job such as immediate access to a telephone and an adequate working surface she may not identify this event as a stressor.

Nurses may also be able to assist women with conflicts in their role as parent. One woman from out of town had her daughter sleep over in her hospital room occasionally. Nurses could initiate this and similar creative programmes to enhance maintained contact between women and their families throughout prolonged hospitalization.

Nurses may be able to assist women with coping with their role as patient. On the antenatal unit, women may not fit into the typical model of patient in that they often do not feel ill, they may not be on medications, and it may be the fetus who is the patient, not the woman. Providing clear guidelines as to what is expected of the women while they are patients may assist them to maintain some feeling of control within the hospital setting. The use of an orientation manual and the inclusion of the women in the planning of their care are ways of providing guidelines. Encouraging the women to dress in regular clothing may both help women to maintain their self image as an adult and to develop a body image during pregnancy similar to women who are not hospitalized for high risk complications.

Limitations of the Study

The following limitations of the study have been identified:

1. The small sample size limits the generalizability of the findings to the larger population of antenatal hospitalized women. This is particularly true of the findings related to stressor identification and rating for prolonged hospitalization since the sample size diminished with each interview.
2. The analysis was carried out on data obtained at specific points of time during the hospitalization. Women may not have recalled stressors at the time of the interview. Therefore, the stressors identified may reflect only the stressors dominant on a particular day rather than the stressors generally experienced. This may particularly limit the interpretation of data obtained from women interviewed only once.
3. The analysis of intensity rating was done under the assumption that women would rate stressors in a similar manner. However, there may be subjective differences in the way that any set rating scale is interpreted.
4. Because access to information about women who did not elect to be part of the study sample was limited, it is not possible to determine if there may be characteristics that make that group different from the women who participated in the study.
5. The interview process may have become a therapeutic intervention for some women, particularly those who were hospitalized for a

prolonged period of time. This difference in perceived purpose of the interview may have influenced the data obtained at those interviews.

6. There was no consistent assessment of the number and intensity of pre-existing stressors.

7. The target population was limited to women who were between 24 and 36 weeks gestation and who were hospitalized for an unpredictable length of time. Therefore, data from some women such as those less than 24 weeks gestation and those hospitalized for a short period of time were not obtained. These data may assist in forming a more complete picture of the stressors experienced by women hospitalized during the antepartum period for high risk pregnancy.

Recommendations for further research

Further research would be of benefit in understanding the experience of women hospitalized in the antenatal period for high risk pregnancy. The areas identified for future research include: hospitalization; detection, prevention and treatment of risk conditions; and psychosocial changes in pregnancy.

Hospitalization

Since differences in stressor identification and rating were found among sub-groups, further study of these sub-groups may be warranted. As the demographic characteristics of childbearing change, the incidence of pregnancy among older, professional women may increase. Since older women may be at increased risk for some complications (Mansfield, 1988; Mansfield & Cohn, 1986), this group may make up a significant portion of the hospitalized population.

The needs of such a group may differ from the needs of younger women. Since job concerns were frequently identified, some information about the needs of professional women upon hospitalization would be of benefit. Another sub-group that may have particular needs is women who have unplanned and/or unwanted pregnancies. Four of the women in this sample had unplanned pregnancies and identified stressors related to this.

Although subjects in the sample consistently rated high confidence in the nursing staff, some of the stressors identified may have been directly or indirectly related to nursing practice. Further research examining the relative merits of various nursing care delivery systems with this patient population including primary nursing and rotating through more than one unit would be of benefit.

Some women reported that they were glad to be in hospital. Most of these women identified few stressors. A few research questions may be related to these observations. Is there a difference in variables such as need for control, self image, and self confidence in women who are happy to be in hospital as opposed to women who are not happy to be in hospital? Are women more likely to be happy to be in hospital if they have known for a long period of time that hospitalization is likely than if the hospitalization is sudden? Are women who are happy to be in hospital more focused on the fetus than on their self or on other people? Are women who are not happy to be in hospital more focused on their self or others than on the fetus?

There may be differences perceived in how difficult it may be to adopt the patient role. Sennott-Miller and Miller (1987) found that weight reduction behaviours were more likely to be adopted if they were perceived as not being difficult. It may be of benefit in designing effective care for antenatal women to recognize which behaviours are perceived as difficult, for example bed rest. In addition, identification of variables that may help to assess which women may find specific behaviours difficult may assist in designing individualized care.

Detection, Prevention and Treatment of Risk Conditions

Premature labour was the most frequent diagnosis within the group. Some premature labour prevention and early detection programmes have been used with some success (Gill & Katz, 1986; Koehl & Wheeler, 1989; Morrison, Martin, Martin, Hess, Gookin, Wiser, 1988). There has been some question whether the success of these programmes is in fact related to the uterine activity monitoring or to the frequent contact with health care professionals (Iams, Johnson, O'Shaughnessy, West, 1987; Johnson, F.F., 1989). Further research examining the use of uterine activity monitoring in the home and in the hospital as well as examining the role of the nurse in the community or in the hospital may be of benefit in reducing the incidence of premature labour and the frequency and length of hospitalization for premature labour.

In addition to research regarding prevention of premature labour, there may be some benefit in studying stressors with innovative treatments for premature labour. Some examples of innovative treatments already in the literature include the use of self-administration of tocolytic drugs (Gill, Smith, McGregor, 1989), home care (Middlemiss, Dawson, Gough, Jones, Coles, 1989) and hypnosis (Omer, 1987). Since these treatments involve a higher degree of client involvement and control than traditional hospital care, there may be significant differences in stressor identification and intensity with these treatments than were found in this study.

Activity restriction was one of the stressors that was most frequently identified. Several women independently increased their activity level with no negative outcome. Research, such as the study proposed by Smith (1988) related to optimal activity levels for high risk conditions, could be of benefit in more accurately assessing when bedrest is necessary.

Some findings not specifically measured in the study bring other potential research questions to mind. A possible explanation for the reduction in frequency of some stressors such as bedrest, social isolation and concerns about children could be that women who have a low tolerance to these stressors find ways to reduce the stressor. If they are unsuccessful with more conventional tactics such as negotiating for changes in activity restrictions, discharge, or delivery, they may subconsciously use other methods of stressor reduction. Perhaps, through the interaction of psyche and soma, some women with low tolerance to some stressors went into labour spontaneously or developed further complications that necessitated induction or cesarian section. It may be possible to identify stressors for which tolerance levels can be correlated with likelihood of the onset of premature labour or the development of further complications. Could assessment of these stressors and tolerance levels be used to predict women more likely to deliver prematurely or to develop other complications? Some women reported that they did not know that they were in premature labour. The premature labour was diagnosed at a routine appointment. Is premature labour more prevalent among women who are unaware of internal cues from their bodies? Could body awareness be used as a predictor of risk for premature labour and other complications?

Psychosocial Changes in Pregnancy

Since stressor identification and intensity ratings found in this study differed from those found in studies of non-high risk samples, it is possible that some developmental events may be different when the woman is diagnosed as having a high risk pregnancy. An example of a developmental event that may differ in high risk hospitalization is body image. Does it make a difference how a woman feels about herself and her pregnancy if she does not go through some of the rituals of wearing maternity clothes and getting input from others about her pregnancy progress such as "you're growing"? Does it make a difference to a woman's body image if she is never able to see herself in a full length mirror? Does lying in bed influence a pregnant woman's kinesthetic sense?

The attachment process between the mother and fetus occurs throughout the pregnancy. Evidence from previous research suggests no difference in the attachment process in high risk and low risk women (Curry, 1987; Kemp & Page, 1986, 1987; Mercer, Ferketich, May, DeJoseph & Sollid, 1988). However, there is also evidence that there is interference in the attachment process when stress levels are high

(Cohen, 1979; Cranley, 1981). Women in this study did not often identify concerns about the fetus. Does this lack of reported concern reflect "normal" or "abnormal" maternal-fetal attachment? Most women had some form of diagnostic testing such as ultrasound and fetal monitoring. Is there a critical level of exposure to such diagnostic testing that reduces concern for the fetus? Is there a difference in later maternal-infant attachment when concerns for the fetus are high as opposed to low?

Each pregnancy requires some adjustment in role definition for the woman. With hospitalization for high risk conditions, even more adjustment in role definition may be required. How is future role definition effected by these adjustments? Do these adjustments effect resumption of roles?

Summary

Stressors were identified and rated by a group of thirty high risk antenatal women who were hospitalized for a variety of reasons. It was possible to identify a group of stressor categories that were frequently identified and/or rated as highly intense. Most of these stressors were related directly to the hospitalization experience. Stressors that were identified frequently included communication with health professionals, concerns about job, and lifestyle changes. Stressors that were rated as highly intense included boredom, uncertainty, and labour and delivery. Stressors that were both frequently identified and rated as being highly intense included concerns regarding children, hospital rules and routines, and treatments and medications. Some differences in intensity and frequency of stressors over time was noted, however, in most cases, significant differences could not be demonstrated. Therefore, it appears that women may not become accustomed to hospitalization.

Some of these stressors may be alleviated through changes in nursing practice and policy. Directions for future research were identified.

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APPENDIX A

High Risk Score

BASELINE AND PAST OBSTETRICAL HISTORY

Age:	16	1;	17-34	0;	35+	2
Parity:	0	1;	1-4	0;	5	2
Previous Stillbirth or Neonatal death						3
Previous Caesarean section						2
Previous third stage problems						1
Previous infant:	greater than 9 lbs					1
Previous premature child						1
Previous retarded child (obstetric related)						1
Weight:	under 100 lbs	2	over 200 lbs (pre-pregnancy)			3
Height:	under 5 feet	1				

ASSOCIATED MEDICAL CONDITIONS

Diabetes	3
Severe Heart Disease	3
Previous Uterine Surgery (other than C.S.)	1
Chronic Renal Disease	2
Narcotic Addict	1
Other Serious Conditions	1-3

(Lupus; colitis; multiple sclerosis, etc) Specify . . . .

PRESENT PREGNANCY

Urinary Estriol Estimations done				2
Uncertain Dates				1
Bleeding:	<20 weeks	1	>20 weeks	2
Small for dates				2
High Blood Pressure				2
Eclampsia :	Severe P.E.T.			3
Multiple Pregnancy:	Breech: Malpresentation:			
Hydramnios:	Unstable or variable lie			3
Deficient Antenatal Care				2
Premature Rupture of Membranes				2
RH or other Iso-Immunization:			Mild (No amniocentesis)	1
			Moderate	2
			Severe or I.U.T.	3

GESTATION

≤ 34 weeks	3
35-36 weeks	2
37-41 weeks	0
≥ 42 weeks	3

APPENDIX B

Informed Consent

Project: Perceived Stressors of Hospitalized High Risk Antepartum Women.

Susan James
M.N. Candidate
Faculty of Nursing
University of Alberta
433 - 9766

Dr. Peggy Anne Field
Thesis Supervisor
Faculty of Nursing
University of Alberta
432 - 6248

I understand that:

The purpose of this research is to study stressors felt by women who have complications during their pregnancy. Stressors are experiences that have caused discomfort, distress, frustration or irritation to you emotionally, socially, economically, physically, or in any other way and has been perceived by you as a threat to your health or lifestyle.

If I agree to be in the study, I will be interviewed by the researcher. The interview will take about one hour. During this interview I will be asked to fill out a form about myself. I will be interviewed again in one week, two weeks and every two weeks until I go home or deliver. These subsequent interviews will last about 15 minutes and I will be asked to identify current stressors.

My name will not appear on the form nor in any research reports or publications. The forms and any other information I give will be kept by the researcher in a locked cabinet. The only people who will see these will be the researcher and her thesis supervisor. The information from the interviews and questionnaires will not be shared with my doctors, nurses or any other health care personnel. If I tell the researcher about stressors related to being in hospital that the researcher thinks the hospital staff could help me with, she will discuss this with me. With my permission, she and I will agree on a staff member to whom she may give this information.

There are no known risks to me from being in the study. I will not likely benefit from being in the study.

I can ask questions about the research at any time. I have the right not to answer any questions and can ask to stop an interview if I feel uncomfortable or distressed at any time.

The researcher may look at my chart for information about my pregnancy and my progress while I am in hospital.

I can request to withdraw from the research at any time.

I will be given a copy of this consent form.

I consent to participate in this study.

____________________ ____________________

subject witness

____

date

All raw data (the forms filled in by myself and the researcher at the interviews) will be destroyed when the study is finished. If I agree, coded data that cannot be connected with my name will be kept in the computer as part of a bank of information about stressors in pregnancy. I agree that the researcher may keep the coded data in the computer bank on completion of the current study.

YES______________ NO______________

signature signature

APPENDIX C

Semi Structured Questionnaire

The purpose of this study is to study stressors in women who have complications related to their pregnancy. A stressor is any experience that has caused discomfort, distress, frustration or irritation to you emotionally, socially, economically, physically, or in any other way and has been perceived by you as a threat to your health or lifestyle. Please list stressors that you have experienced up to this time during this pregnancy, including your hospital admission.

You are now asked to rate these stressors in terms of your perception of their intensity or strength, based on your assessment of the threat to your health or lifestyle each one has caused you. Mark your rating beside each stressor, using an X beneath the number that best describes the intensity of the stressor. A score of 1 represents the least threatening stressor you might experience. A score of 10 represents the most threatening stressor your might experience. You do not have to use every number and more than one stressor may be rated with the same score. However, a stressor given a score of 6 ought to be twice as threatening as a stressor given a score of 3.

Thank you for your participation in this study.

First Interview

least intense — moderately intense — most intense

1 2 3 4 5 6 7 8 9 10

1. ______________________________ _ _ _ _ _ _ _ _ _ _
2. ______________________________ _ _ _ _ _ _ _ _ _ _
3. ______________________________ _ _ _ _ _ _ _ _ _ _
4. ______________________________ _ _ _ _ _ _ _ _ _ _
5. ______________________________ _ _ _ _ _ _ _ _ _ _
6. ______________________________ _ _ _ _ _ _ _ _ _ _
7. ______________________________ _ _ _ _ _ _ _ _ _ _
8. ______________________________ _ _ _ _ _ _ _ _ _ _
9. ______________________________ _ _ _ _ _ _ _ _ _ _
10. ______________________________ _ _ _ _ _ _ _ _ _ _
11. ______________________________ _ _ _ _ _ _ _ _ _ _
12. ______________________________ _ _ _ _ _ _ _ _ _ _
13. ______________________________ _ _ _ _ _ _ _ _ _ _
14. ______________________________ _ _ _ _ _ _ _ _ _ _
15. ______________________________ _ _ _ _ _ _ _ _ _ _

Subsequent Interviews

These are the stressors that you identified at the previous interview. Would you please rate them on a scale of 0 to 10 with 0 representing no longer a stressor, 1 representing the least intense stressor possible and 10 representing the most intense stressor possible. Mark the your rating with an X under the number you have selected.

Please add any stressors that you have identified in the time since the last interview. When were you first aware of this stressor?

Please rate these stressors in the same manner as the ones above.

Follow-up Interview

	least intense				moderately intense					most intense	
	0	1	2	3	4	5	6	7	8	9	10
1. ____________	_	_	_	_	_	_	_	_	_	_	_
2. ____________	_	_	_	_	_	_	_	_	_	_	_
3. ____________	_	_	_	_	_	_	_	_	_	_	_
4. ____________	_	_	_	_	_	_	_	_	_	_	_
5. ____________	_	_	_	_	_	_	_	_	_	_	_
6. ____________	_	_	_	_	_	_	_	_	_	_	_
7. ____________	_	_	_	_	_	_	_	_	_	_	_
8. ____________	_	_	_	_	_	_	_	_	_	_	_
9. ____________	_	_	_	_	_	_	_	_	_	_	_
10. ____________	_	_	_	_	_	_	_	_	_	_	_
11. ____________	_	_	_	_	_	_	_	_	_	_	_
12. ____________	_	_	_	_	_	_	_	_	_	_	_
13. ____________	_	_	_	_	_	_	_	_	_	_	_
14. ____________	_	_	_	_	_	_	_	_	_	_	_
15. ____________	_	_	_	_	_	_	_	_	_	_	_

APPENDIX D

Biographical Information

First Interview

1. What is your age? _______years

2. Do you live in Edmonton?

YES_________ NO_____________

If NO, how many miles from Edmonton is your home?______

3. Do you have friends or family in Edmonton?

YES______NO_____

4. On average, how many visitors do you have each day?

LESS THAN 1____ 1____ 2____ 3____ 4____ MORE THAN 4____

5. On average, how often does your husband / boyfriend / partner visit?

MORE THAN once a day___ once a day____

LESS THAN once a day___ NOT at all since admission___

6. How many pregnancies have you had including this one? ________

7. How many children do you have at home? ________ (If you have no children at home, go to question 11)

8. What are their ages? 1._____, 2._____, 3._____, 4._____,

5._____, 6._____, 7._____, 8._____, other (state)_____.

9. Who is caring for your children right now?

____

10. Has the person caring for your children had to take time off work?

YES____ NO____

11. Have you had problems or complications in other pregnancies?

YES____ NO _____

12. Have you ever been a patient in hospital before?

YES____ NO____

13. Have you been a patient in hospital for this pregnancy before this admission?

YES_____ NO_____

If YES, how many times have you been in hospital this pregnancy, not including this admission?

_____

Were you in this hospital?

YES_____ NO_____

14. Why have you been hospitalized now?

____

15. Did you come to this room when you first came to hospital?

YES_____ NO_____

If NO, what other room(s) were you in and for about how long?

Emergency room: NO____ YES____. ______hours

Labour room: NO____ YES____. ______hours

other_________: NO____ YES____. ______hours

other_________: NO____ YES____. ______hours

16. What is your occupation?

____

17. Were you working outside your home during this pregnancy?

YES____ NO____

If YES, were you still working when you found out that you had to come to hospital?

YES_____ NO______

18. How many days have you now been in hospital?

____

19. Do you smoke?

YES_____ NO_____

20. What kind of room are you in?

One bed_____(go to question 21) Two beds_____

If you are in a two bed room, how many different room-mates have you had up until now?

1_____ 2_____ 3_____ 4______ other_____

Do you have a room-mate now?

YES_____ NO_____

If yes, has she been here longer than you?

YES_____ NO_____

If no, how long has she been here?

Less than 1 day_____ 1 day_____ 2 days_____

If you could choose a room-mate, would you choose this one?

YES_____ NO_____

21. If you could choose, what kind of room would you prefer?

One bed_____ Two beds_____ Three beds_____ other_____

22. Check the statement(s) that best describe the kind of activity you are allowed right now.

I must stay in bed at all times. _____

I am only allowed to get up to the bathroom_____

I am only allowed to get up to the bathroom and the shower. _____

I am allowed to go places on this floor in a wheelchair. _____

I am allowed to go outside to smoke in a wheelchair only two times a day. _____

I am allowed to go outside to smoke in a wheelchair, whenever I wish. _____

I am allowed to go anywhere that I want in a wheelchair. _____

I am allowed to walk to places on this floor. _____

I am allowed to walk outside to smoke only two times a day. _____

I am allowed to walk outside to smoke whenever I wish. _____

I am allowed to walk anywhere that I want to go. ____

23. What is your total family income?

LESS THAN $20,000____ $20,000 to $35,000____ MORE THAN $35,000___

24. What is your marital status?

MARRIED___ COMMON LAW___ SINGLE___ DIVORCED___ SEPARATED___

25. How many years of school have you completed? _________

26. How would you describe your ethnic background?

____

APPENDIX E

Information Update

1. How many days have you been in hospital? ________

2. Have you had a pass to go home since the last interview?

   YES _____ NO ______

   If yes, how many times have you had a pass?

   1____ 2_____ 3_____ 4_____ more that 4_____

   How many days ago was your last pass?

   less than 1____ 2____ 3_____ 4_____ more than 4_____

3. Check the statement(s) that best describe the kind of activity you are allowed right now.

   I must stay in bed at all times. _____

   I am only allowed to get up to the bathroom_____

   I am only allowed to get up to the bathroom and the shower. _____

   I am allowed to go places on this floor in a wheelchair. _____

   I am allowed to go outside to smoke in a wheelchair only two times a day. _____

   I am allowed to go outside to smoke in a wheelchair whenever I wish. _____

   I am allowed to go anywhere that I want in a wheelchair. _____

   I am allowed to walk to places on this floor. _____

   I am allowed to walk outside to smoke only two times a day. _____

   I am allowed to walk outside to smoke whenever I wish. _____

   I am allowed to walk anywhere that I want to go. ____

4. How many different room-mates have you had since the last interview?

0____ 1_____ 2_____ 3_____ 4_____ 5_____ more than 5_____

5. Have you changed rooms since the last interview?

YES_____ NO_____

6. What kind of room are you in now?

one bed_____ two bed_____

7. If you are in a two bed room, do you have a room-mate now?

YES_____ NO_____

If you could choose, would you choose this room-mate?

YES_____ NO_____

8. Do you get adequate time to yourself here in the hospital?

YES_____ NO_____

9. How many of the other women on the unit have you met?

____

10. On average, how many visitors do you have each day?

LESS THAN ONE___ 1___ 2___ 3___ 4___ MORE THAN FOUR___

11. How often has your husband / boyfriend / partner visited in the past week? ___________ times

6

12. In general, how would you rate your confidence in the health care team?

Nurses:

low _____ medium _____ high _____ no contact _____

Student Nurses:

low _____ medium _____ high _____ no contact _____

Doctors:

low _____ medium _____ high _____ no contact _____

Social Workers:

low _____ medium _____ high _____ no contact _____

Dietitions:

low _____ medium _____ high _____ no contact _____

Physio-therapist:

low _____ medium _____ high _____ no contact _____

Recreational-therapist (Craft Lady):

low _____ medium _____ high _____ no contact _____

Other _______________:

low _____ medium _____ high _____ no contact _____

Other _______________:

low _____ medium _____ high _____ no contact _____

13. Who is looking after your children now?

____

14. In general, how would you rate the amount of concern you have for the way your family is coping at home?

low _____ medium _____ high _____

APPENDIX F

SELECTED DEMOGRAPHIC DESCRIPTIONS OF THE SAMPLE

Table F-1

Admission Gestation

WEEKS	NUMBER	FREQUENCY
25	1	3%
26	0	0%
27	4	13%
28	2	7%
29	2	7%
30	4	13%
31	1	3%
32	4	13%
33	3	10%
34	3	10%
35	3	10%
36	3	10%

Table F-2

Number of Interviews

INTERVIEWS	NUMBER OF SUBJECTS	FREQUENCY
1	14	47%
2	7	23%
3	5	17%
4	1	3%
5	1	3%
6	1	3%
7	1	3%

Table F-3

Gravida

GRAVIDA	NUMBER	FREQUENCY
1	12	40%
2	4	13%
3	4	13%
4	5	17%
5	1	3%
6	2	7%
7	1	3%
8	0	0%
9	1	3%

Table F-4

Para

PARA	NUMBER	FREQUENCY
0	14	47%
1	7	23%
2	4	13%
3	1	3%
4	3	10%
5	0	0%
6	0	0%
7	1	3%
8	0	0%

Table F-5

Number of Children at Home

CHILDREN	NUMBER	FREQUENCY
0	12	40%
1	11	36%
2	1	3%
3	2	7%
4	3	10%
5	0	0%
6	1	3%

Table F-6

Diagnosis

DIAGNOSIS	NUMBER	FREQUENCY
Premature labour	12	40%
P.R.O.M.	1	3%
P.I.H.	1	3%
Placenta Previa	4	13%
Abruptio Placenta	2	7%
Twins	1	3%
Fetal Assessment	2	7%
Rest	1	3%
Medical Condition	3	10%
Undiagnosed A.P.H.	2	7%
Hypertension	1	3%

APPENDIX G

Examples of Specific Stressors in Each Category

PHYSICAL DISCOMFORTS OF PREGNANCY

I feel tired all the time

pregnancy discomforts like swelling and feeling heavy

trying to get work done when I feel tired

feeling uncomfortable

LIFESTYLE CHANGES

my friends have changed since I've been pregnant

I have to eat a lot

I have no social life

I can't drive, I can't reach the pedals

my co-workers are doing things I can't do

BODY IMAGE

my shape sometimes disturbs me

I feel out of proportion as I get bigger

I worry about the scar (Cesarian Section)

gaining weight

finding suitable clothing to wear during pregnancy

UNPLANNED PREGNANCY

this baby was unplanned, I'm thinking about adoption

I conceived even though I was careful

I'm not ready for pregnancy at this time

I don't like the idea of being a mother

LABOUR AND DELIVERY

afraid of how labour will feel with twins

having to have a cesarian section

worried about having an emergency cesarian and general

will labour be a problem

RESPONSIBILITY OF HAVING A BABY

single parent, not getting any support

scared how I will manage once the baby is born

going home with a new baby and the adjustments I have to make

concern about child care in the future

HAVING A COMPLICATION

pain from the bladder infection

scared of premature labour happening again

was it my fault that the water broke

shocked that I suddenly got complications

BEING HOSPITALIZED

I didn't like moving back and forth between hospitals

I'd rather be home

being in hospital means something is wrong

fear of hospitals

UNCERTAINTY

not knowing what is going on with myself

frustrated that I don't know what's happening

waiting for the bleeding to start again

uncertainty - when and what will happen

CONCERN/ADVICE OF OTHERS

my fiance drives me crazy with his theories

people tell me not to work so hard

people tell me not to feel guilty

my family is over-concerned

TIME

I want it over and done with

length of stay

sitting around waiting

going to be in a while

CONCERNS REGARDING CHILDREN

I worry about my daughter

not being able to talk to the kids

no one to count on for child care

finding reliable child care

CONCERNS REGARDING SPOUSE

is my husband looking after himself

interferes with my relationship with my husband

my husband needs my support

finding a place for my husband to stay

CONCERNS REGARDING THE FETUS/NEWBORN

afraid of losing the baby

worry if the baby will live if it is born soon

worry about having a health baby

concern about having a child with a handicap

CONCERNS REGARDING FINANCES

will I be able to go back to work

financial concerns of having twins

have to hire full time help

have to quit my job

CONCERNS REGARDING JOB

leaving things incomplete at work

thinking about work, left suddenly

torn between career and home

turning work projects over to others

HOSPITAL RULES AND ROUTINES

I don't know who's responsible for what

moved to postpartum

I can't be alone with my husband

they won't let my doctor do the delivery

TREATMENTS AND MEDICATIONS

taking medications

rare blood type, worry about transfusion

I.V. is restricting and makes me sick

diagnostic tests

COMMUNICATION WITH HEALTH PROFESSIONALS

it's hard to explain the pain to the nurses

having to talk to a new doctor

don't get to see the doctor long enough to ask questions

getting questions answered about by condition

ACTIVITY RESTRICTIONS

not being able to get up and do what I want

will lying in bed make me too weak to deliver

can't go outside for walks

hard on body to be on bedrest

SOCIAL ISOLATION

no visitors

no phone

lonely, like prison

confined to my room, feel isolated

SLEEP DISRUPTION

not sleeping

no sleep

noise in hospital, can't sleep

can't get any rest

LEAVING THINGS BEHIND/UNDONE

missing my own wedding

not able to do the things I planned for this week

will miss shopping for baby things

miss family events

EMOTIONS

hard to stay cheerful

emotional strain

not having a direction

guilt, I may have been able to prevent the cramps

DEPENDENCY/LOSS OF CONTROL

- depending on others
- hostage, loss of control
- feel like a burden
- relying on others

BOREDOM

- bored
- nothing to do

APPENDIX H

STRESSOR FREQUENCIES

Table H-1

Stressor Frequency, Whole Sample

CATEGORY	NUMBER	FREQUENCY
FIRST INTERVIEW		
Activity Restriction	21	8%
Communication	20	8%
Social Isolation	20	8%
Concerns re Children	19	7%
Hospital Rules/Routines	17	6%
SECOND INTERVIEW		
Hospital Rules/Routines	12	8%
Communication	12	8%
Concerns re Finances	11	7%
Lifestyle Changes	9	6%
Time	9	6%
THIRD INTERVIEW		
Hospital Rules/Routines	13	16%
Communication	9	11%
Lifestyle Changes	6	7%
Time	5	6%
Concerns re Finances	5	6%
Activity Restrictions	5	6%

Table H-2

Stressor Frequency, Women with Children

CATEGORY	NUMBER	FREQUENCY
INTERVIEW ONE		
Concerns re Children	19	14%
Activity Restrictions	12	9%
Social Isolation	11	8%
Hospital Rules/Routines	10	7%
Lifestyle Changes	9	6%
INTERVIEW TWO		
Hospital Rules/Routines	8	13%
Lifestyle Changes	6	10%
Concerns re Children	6	10%
Concerns re Finances	5	8%
Concerns re Job	4	6%
Communications	4	6%
INTERVIEW THREE		
Hospital Rules/Routines	9	19%
Lifestyle Changes	5	10%
Concerns re Job	4	8%
Communications	4	8%

Table H-3

Stressor Frequency, Women without Children

CATEGORY	NUMBER	FREQUENCY
INTERVIEW ONE		
Communications	14	11%
Treatments and Medications	10	8%
Activity Restriction	9	7%
Social Isolation	9	7%
Concerns re Fetus/Newborn	8	6%

Table H-4

Stressor Frequency, Women Working When Admitted

CATEGORY	NUMBER	FREQUENCY
INTERVIEW ONE		
Concerns re Job	11	8%
Treatments and Medications	10	7%
Communications	10	7%
Social Isolation	10	7%
Lifestyle Changes	9	6%
Activity Restrictions	9	6%

Table H-5
Stressor Frequency, Women Not Working When Admitted

CATEGORY	NUMBER	FREQUENCY
INTERVIEW ONE		
Concerns re Children	16	13%
Activity Restrictions	12	10%
Communications	10	8%
Social Isolation	10	8%
Hospital Rules/Routines	9	7%
INTERVIEW TWO		
Hospital Rules/Routines	9	17%
Concerns re Finances	6	11%
Concerns re Children	5	9%
Communications	5	9%
Activity Restrictions	4	7%
INTERVIEW THREE		
Hospital Rules/Routines	10	27%
Communications	5	14%
Concerns re Children	3	8%
Concerns re Finances	3	8%
Activity Restrictions	3	8%

Table H-6

Stressor Frequency, 25 to 28 Weeks Gestation

CATEGORY	NUMBER	FREQUENCY
INTERVIEW ONE		
Communications	11	14%
Hospital Rules/Routines	9	11%
Concerns re Children	8	10%
Concerns re Finances	6	8%
Activity Restrictions	6	8%
INTERVIEW TWO		
Communications	9	13%
Hospital Rules/Routines	8	12%
Time	7	10%
Concerns re Finances	6	9%
Activity Restrictions	4	6%
INTERVIEW THREE		
Hospital Rules/Routines	9	19%
Communications	7	15%
Treatments and Medications	5	11%
Concerns re Finances	4	9%

Table H-7

Stressor Frequency, 29 to 32 Weeks Gestation

CATEGORY	NUMBER	FREQUENCY
INTERVIEW ONE		
Activity Restriction	11	10%
Treatments and Medications	9	9%
Lifestyle Changes	8	8%
Social Isolation	8	8%
Concerns re Job	7	7%
Communications	7	7%

APPENDIX I

STRESSOR INTENSITIES

Table I-1

Stressor Intensity, Whole Sample

STRESSOR	MEAN
INTERVIEW ONE	
Concerns re Children	9.05
Uncertainty	9.00
Labour and Delivery	8.75
Boredom	8.25
Concerns re Fetus/Newborn	8.14
INTERVIEW THREE	
Treatments and Medications	9.33
Being Hospitalized	8.00
Concerns re Children	8.00

Table I-2

Stressor Intensity, Women with Children at Home

STRESSOR	MEAN
INTERVIEW ONE	
Treatments and Medications	9.33
Concerns re Children	9.05
Uncertainty	9.00
Labour and Delivery	8.75
Concerns re Fetus/Newborn	8.50
Boredom	8.50
INTERVIEW TWO	
Sleep Disruption	10.00
Time	8.67
Unplanned Pregnancy	8.00
Treatments and Medications	8.00
Boredom	8.00

Table I-3

Stressor Intensity, Women without Children at Home

STRESSOR	MEAN
INTERVIEW ONE	
Uncertainty	9.00
Labour and Delivery	8.75
Social Isolation	8.56
Time	8.25
INTERVIEW TWO	
Emotions	9.50
Uncertainty	9.40
Boredom	8.00

Table I-4

Stressor Intensity, Women Working When Admitted

STRESSOR	MEAN
INTERVIEW ONE	
Boredom	10.00
Uncertainty	9.50
Concerns re Children	9.00
Labour and Delivery	8.60
Being Hospitalized	8.00

Table I-5

Stressor Intensity, 25 to 28 Weeks Gestation

STRESSOR	MEAN
INTERVIEW ONE	
Concerns re Children	10.00
Concerns re Spouse	10.00
Concerns re Fetus/Newborn	9.33
Labour and Delivery	9.00
Being Hospitalized	9.00
Uncertainty	9.00

Table I-6

Stressor Intensity, 29 to 32 Weeks Gestation

STRESSOR	MEAN
INTERVIEW ONE	
Labour and Delivery	10.00
Uncertainty	9.00
Boredom	9.00
Concerns re Children	8.67

Table I-7

Stressor Intensity, 33 to 36 Weeks Gestation

STRESSOR	MEAN
INTERVIEW ONE	
Body Image	9.00
Hospital Rules/Routines	9.00
Boredom	8.50
Concerns re Children	8.44

APPENDIX J

ANOVA TABLES

Table J-1

Mean Intensity Ratings, Whole Sample

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	389.6	25	15.58	22.59	1.57	reject
Within Group	1314.94	240	5.48			
Total	1704.55	265				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	255.35	25	10.21	1.45	1.94	fail
Within Group	903.77	128	7.06			
Total	1159.12	153				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	351.06	21	16.72	4.15	1.73	reject
Within Group	266.21	66	4.03			
Total	617.27	87				

Table J-2

Mean Intensity Ratings, Women with Children

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	354.9	24	14.79	2.3	1.63	reject
Within Group	740.09	115	6.44			
Total	1094.99	139				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	147.06	21	7.00	1.89	1.84	reject
Within Group	151.92	41	3.71			
Total	298.98	62				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	173.84	18	9.66	1.43	1.99	fail
Within Group	202.16	30	6.74			
Total	376.00	48				

Table J-3

Mean Intensity Ratings, Women without Children

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	5288.16	24	220.34	2.47	1.63	reject
Within Group	821.81	100	8.22			
Total	6109.97	124				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	249.75	24	10.41	1.73	1.68	reject
Within Group	385.37	64	6.02			
Total	635.12	88				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	85.26	16	5.33	1.74	2.25	fail
Within Group	55.14	18	3.06			
Total	140.40	34				

Table J-4

Mean Intensity Ratings, Women Working

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	954.07	24	39.75	99.38	1.63	reject
Within Group	38.36	96	.40			
Total	992.43	120				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	168.91	24	7.04	.86	>1.0	fail
Within Group	423.17	52	8.14			
Total	592.08	76				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	152.80	16	9.55	1.74	2.06	fail
Within Group	137.1	25	5.48			
Total	28.9	41				

Table J-5

Mean Intensity Ratings, Women not Working

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	159.57	23	6.94	1.55	1.63	fail
Within Group	529.25	118	4.49			
Total	688.86	141				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	159.58	21	7.60	1.25	1.76	fail
Within Group	322.21	53	6.08			
Total	481.75	74				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	72.13	14	5.15	.92	>1.0	fail
Within Group	134.1	24	5.59			
Total	206.23	38				

Table J-6

Mean Intensity Ratings, 25 to 28 Weeks Gestation

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	134.70	21	6.41	5.43	1.76	reject
Within Group	67.42	57	1.18			
Total	202.12	78				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	98.97	13	7.61	.84	>1.0	fail
Within Group	145.03	16	9.06			
Total	244.00	29				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	111.31	14	7.95	1.02	2.08	fail
Within Group	155.26	20	7.76			
Total	266.57	34				

Table J-7

Mean Intensity Ratings, 29 to 32 Weeks Gestation

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	306.81	25	12.27	2.10	1.65	reject
Within Group	462.18	79	5.85			
Total	768.99	104				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	176.30	19	9.28	2.03	2.09	fail
Within Group	95.92	21	4.57			
Total	272.22	40				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	140.77	17	8.28	1.92	2.51	fail
Within Group	90.82	21	4.32			
Total	231.59	38				

Table J-8

Mean Intensity Ratings, 33 to 36 Weeks Gestation

Anova Summary - First Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	158.06	24	6.59	2.6	1.72	reject
Within Group	141.94	56	2.53			
Total	300.00	80				

Anova Summary - Second Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	159.09	21	7.58	1.32	2.02	fail
Within Group	137.89	24	5.75			
Total	296.98	45				

Anova Summary - Third Interview

Source	*SS*	*df*	*S*	F_{obt}	F_{crit}	Decision
Between Group	2.22	5	.44	.28	>1.0	fail
Within Group	4.67	3	1.56			
Total	6.89	8				